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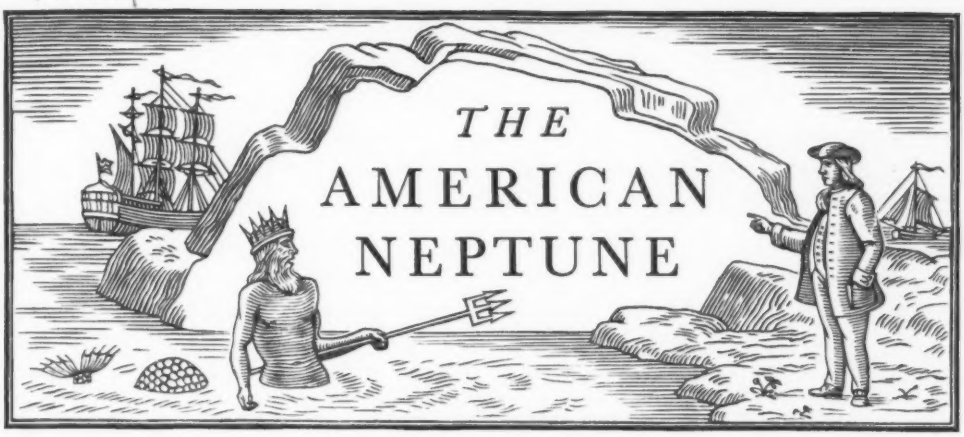


VOLUME I JANUARY 1941 NUMBER 1

THE AMERICAN NEPTUNE is a quarterly journal devoted to the many aspects of marine research. The field of action will include the Americas, North and South, and the journal, although published in the United States, will include, in so far as possible, studies of the maritime history of Canada and Hispanic America. It will combine many phases of activity and several related, although somewhat divergent fields of interest. These will include:

1. *Technical nautical and marine historical research.*
   Articles dealing with the design, construction, and operation of various types of vessels at different periods.

2. *General historical articles.*
   Articles dealing with the activities of merchants and shipping lines; histories of individual vessels and voyages; studies of ports; naval, privateering, steamship, and yachting history.

3. *History of scientific navigation.*
   Articles dealing with the development of the science of navigation, nautical instruments, charts, and maps.

4. *Sea lore.*
   Eye-witness accounts and memoirs dealing with marine activities in various regions; examples of sea lore, chanteys, etc. may be included from time to time.

5. *Biography.*
   Biographical sketches of shipmasters, merchants, and ship builders will be included where the subjects were of significance in the maritime history of their region. Genealogical accounts and works of local piety will be avoided.

6. *Marine art.*
   Articles on marine painting, prints, shipcarving, and the historic decoration of watercraft.

7. *Documents.*
   Significant unpublished manuscripts, reprints of very rare tracts, and reproductions of contemporary photographs of sailing vessels and early steamships.

8. *Ship models.*
   Accounts of collections of historical models. Data including plans for the construction of models. Sets of plans of highest possible historical and technical accuracy will be frequently included. The emphasis in this section will be upon *what* to build rather than *how* to built it.

9. *Marine museums.*
   Articles dealing with the collections and activities of various marine museums, and accounts of the marine possessions of institutions primarily devoted to other purposes.

10. *Bibliography.*
    Reviews, listings, and notes on old and new maritime books. Contributions toward an annual bibliography of significant articles appearing in serial publications.

11. *Notes and queries.*
    A section, containing notes of general interest, requests for information, and replies whenever possible, will be included in each issue. Subscribers are urged to forward notes and queries.

The conduct of the journal, the editorial policy in general, and the acceptance and rejection of articles submitted for publication rest in the hands of five Editors, assisted by an Editorial Advisory Board, which includes representatives of regions and institutions and specialists in various fields of maritime history. The Editors and members of the Advisory Board serve without compensation and undertake to divide the work among themselves to the best of their ability. The Editors of THE AMERICAN NEPTUNE hope to achieve a balance between accurate technical articles and readable general articles without undue emphasis upon either. They will endeavor to maintain the highest possible standards of accuracy and style, but will endeavor with equal purpose to keep the journal from becoming dull. Each number will contain articles in a number of the fields mentioned, and no number will become clogged with tables of figures. Care will be taken to insure against undue emphasis upon any particular region. While accepting editorial responsibility, the Editors do not necessarily accept or endorse the opinions expressed by the

writers. The subject matter will be predominately American, although articles dealing with the European background of American maritime history and, in certain cases, articles by American scholars upon European subjects will be included. The Editors wish to coöperate with authors and with other journals and will, in so far as possible, refer articles which may not fall within the purview of the NEPTUNE to other suitable publications.

THE AMERICAN NEPTUNE is intended to be a common meeting ground for all interested in the many diverse aspects of marine research. One of its principal functions will be the description of material which, although of general interest, may not be widely known. Articles describing the collections of the various museums and institutions may provide the reader with a clue concerning the location of source material. The bibliographic section will be devoted to the same purpose with emphasis upon current publication. In addition to full reviews of significant new books, shorter notices, and simple title listings of others in each issue, the Editors propose to include from time to time a review of an outstanding old book on a predominately nautical theme, describing in some detail the value and contents of the work and giving the location of known copies. In connection with these reviews, the Editors hope to be able to furnish information about the possibility and cost of securing microfilm reproductions of the book.

It cannot be too strongly emphasized that THE AMERICAN NEPTUNE is intended to serve as a means of communication between its readers and that its success will depend upon the measure of literary and historical support which it receives from them. Readers are invited to use the journal freely for the publication of their discoveries, whether cast in the form of articles or of brief notes, and as a medium whereby they may carry on their inquiries. Suggestions, comments, and criticisms from readers will be welcomed and will be given careful consideration.

THE AMERICAN NEPTUNE is a strictly non-commercial undertaking, and no payment is made for contributions. As the Editors give their services, receipts from subscription will be devoted entirely to meeting the cost of printing and distribution. The Carnegie Corporation of New York has, by a generous grant, made possible the publication of the preliminary announcement. That Corporation is not, however, in any way responsible for the future of the journal and is not to be understood as approving, by virtue of its grant, any of the statements made or views expressed therein. Publication of the journal will only be possible if it can be made self-supporting by subscriptions.

Columbus and Polaris[1]

BY SAMUEL ELIOT MORISON

Commodore, Harvard Columbus Expedition, 1939-1940

CHRISTOPHER COLUMBUS as a celestial navigator was a North Star observer. He used Polaris to tell time at night, to check compass variation, and to find latitude. In all his writings, which for abundance exceed those of any navigator of that era, there are no references to his using any other method of determining latitude; and his two recorded attempts to find longitude by timing lunar eclipses were not successful. Yet the several recorded observations of Polaris by the great Admiral have never been coördinated or even properly understood. Not all have been correctly translated. A class of writers aptly described by Charcot as *géographes en chambre,*[2] although innocent of all knowledge of celestial navigation, have not hesitated to adduce the Admiral's findings as proof of his incompetence;[3] whilst others have used the same data to prove that he was an accomplished man of science, and have even excused his errors on the ground that they were deliberately intended to mislead.[4]

In 1492 Polaris or the North Star (*α Ursae Minoris*) was used by seamen for two main purposes: to tell time by night, and to determine latitude.[5] The first has become obsolete with the universal use of clocks and

[1] This study was made with the collaboration of Captain John W. McElroy aboard the barkentine *Capitana* of the Harvard Columbus Expedition. Since going ashore Mr. James Gilbert Baker of the Society of Fellows, Harvard University, has given me outstanding assistance in astronomical calculations; and Mr. William H. Barton, Jr., director of the Hayden Planetarium of the New York Society of Natural History, collaborated by turning the Planetarium back to 1492 and 1498 for the purpose of further checking conclusions and observing the aspect of the heavens on definite dates.

[2] J. B. Charcot, *Chr. Colomb vu par un marin* (1928), p. 241.

[3] E.g., Cecil Jane in introduction to *Select Documents Illustrating the Four Voyages of Columbus,* I (Hakluyt Soc., 2d ser., LXV), xl-xli, and E. G. R. Taylor, ibid., II (LXX), lxxxi-lxxxiii. Jane seriously misinterprets Columbus, ibid., I (LXV), xli, in stating that he claimed to have ascertained his position in Veragua by a method 'which resembles a prophetic vision.' Consult the passage, ibid., II (LXX), 99. What Columbus meant was that scientific navigation, like prophetic vision, was a mystery to common sailors and others who did not understand it. So today!

[4] Alberto Magnaghi, 'I presunti errori attribuiti a Colombo,' *Bolletino società geografica italiana,* 6th ser., V (1928), 459-94, 553-82.

[5] Both these are well explained by Miss E. G. R. Taylor in her article in *Geographical Journal,* LXXVIII (1931), 350, quoted in Lancelot Hogben, *Science for the Citizen* (1938), pp. 124-26.

watches, but the second is in constant use by navigators today. Let us see how each was done.

URSA MINOR AS A NIGHT CLOCK

The value of Polaris for navigation is suggested by its name. Since about the year 1000 B.C. it has been the visible star nearest the Celestial Pole, about which, by navigators, the heavens are still assumed to revolve. Every star-gazer in the northern latitudes has noted the two principal circumpolar constellations, the Great Bear (commonly known as the Big Dipper in the United States, and as Charles's Wain in England), and Cassiopeia's Chair. Each of these can be and has been used to tell time by night. 'Heigh-ho!' says the First Carrier in Shakspere's *Henry IV*, Part 1, 'An't be not four by the day, I'll be hang'd: Charles' wain is over the new chimney . . .'[6] But a much better constellation for that purpose, and the one that Columbus used, is the Little Bear or Little Dipper, hanging directly on Polaris, which acts as the end of the tail, or handle. The Portuguese navigators called this the constellation *A Buzina* (The Trumpet) and the Italians *Il Cornu* (The Horn). Dante, in that radiantly beautiful opening of *Paradiso* xiii, where he describes the constellations that, garlanded with each other, dance about the Celestial Pole, tells us

> Immagini la bocca de quel corno
> che si comincia in punto dello stelo
> a cui la prima rota va dintorno.
>
> Imagine the mouth of that Horn
> which hath its beginning on the very axle
> upon which the First Sphere revolveth.

As this Trumpet, Horn, Little Bear, or Little Dipper swings around Polaris, it marks the passing hours; every hour it moves through an arc of 15°. The stars that mark the handle (δ and ϵ) are relatively faint, as are those (ζ and η) which mark the edge of the dipper nearest Polaris. But the two (β and γ) which mark the edge of the dipper farthest from Polaris are relatively bright, and it is these which are known in all modern languages as the Guards.[7] Kochab (β *Ursae Minoris*), the bright-

[6] Act ii, scene 1.

[7] E. G. R. Taylor, *Tudor Geography, 1485-1583* (London, 1930), p. 54, errs in stating that The Guards were ϵ, ζ and η of the Great Bear or Dipper, and her diagram facing p. 56, constructed on that hypothesis, is meaningless; the error is acknowledged in *Geographical Journal*, LXXVIII (1931), 350. No other stars but β and γ *Ursae Minoris* have ever been called The Guards, in any language. It is true that β alone is used to tell time, but γ, being of almost identical magnitude as β, is always visible when her sister is, and acts as a convenient guide for finding β. The following are the magnitudes of the stars of Ursa Minor: α (Polaris) 2.12, β (Kochab) 2.24, γ 3.14, δ 4.44, ϵ 4.40, ζ 4.34, η 5.04.

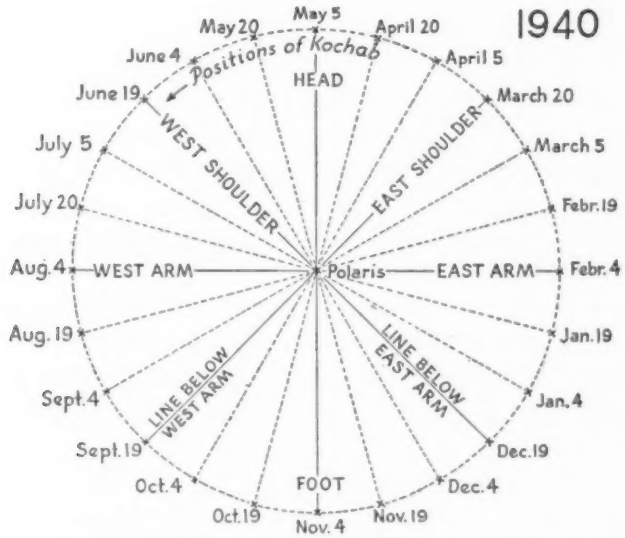
er of the two, known to the Portuguese as *a guarda dianteira* (the Principal Guard) is the one whose position in relation to Polaris has been used to tell time, since time immemorial. Kochab is a ruddy star, and easy to find even when the fainter members of the same constellation are obscured by moonlight or haze.

As the sidereal or stellar day is almost four minutes shorter than the solar day of twenty-four hours, the Polaris clock 'loses' an hour every fifteen days; and in order to use it to tell solar time by night a simple table or diagram must be constructed. The first person who is known to have worked out this correlation was Raymond Lull, as early as 1272. He invented the nocturnal, an instrument that was still in use on sailing vessels a century ago. It consisted of three disks revolving within each other, about a hole through which Polaris was observed. Upon the outer disk were marked the months and days, upon the second the hours, and upon the third a picture of Kochab. After adjusting the zero point on the hour disk to the proper day on the outer disk, you rotated the Kochab circle until the image pointed to the star, in the meantime keeping Polaris centered through the hole, and the top of the outer disk directly over it. Having adjusted Kochab's image to his original, you read off the hour from the point opposite him on the hour disk.

Lull's nocturnal, with the simple improvement of substituting a moveable protruding arm for the Kochab disk, was in use for centuries. Every well-equipped sailing vessel carried a boxwood nocturnal, hanging to a nail on the mainmast, so that the officer on night duty could tell when to relieve the man at the wheel, call the next watch, and heave the log. One that Nathaniel Bowditch constructed, from a description in Nathaniel Colson's *Mariner's New Kalendar* (1746), is preserved in the Harvard Astronomical Observatory.

Nocturnals were rare in Columbus's day, but a simple diagram served the same purpose. A figure of a little man was drawn with feet together, outstretched arms, and Polaris on his breast. Four diagonals were drawn through his breast, two of them through arms, head and feet, and the other two half-way between. These eight lines gave eight cardinal positions of Kochab, the Principal Guard. They were known as Head, West Shoulder (or, Line over West Arm), West Arm, Line under West Arm, Feet, Line under East Arm, East Arm, and East Shoulder (or Line over East Arm). These are the eight 'Lines.' The Guards moved from Line to Line in three hours. On the same diagram you noted where the Principal Guard (Kochab, β *Ursae Minoris*) was located at midnight for every two weeks of the year, and from that you could readily calculate where it

would be at every hour on any particular night.[8] Thus, consulting diagram, we find that the Principal Guard was at Head at midnight on 15 April, and at Feet at midnight 15 October around 1500. Owing to the precession of the equinoxes the Polaris clock is now 15° or one hour slower than in 1492. In other words, the Principal Guard reaches a given line at midnight, about ten days later (allowing for the change in the calendar) in 1940 than it did in 1800. Our diagram, corrected for 1940, will not substantially alter for another thirty years; from it the present-day observer may tell the night hours from Kochab, and with a little practice come within ten or fifteen minutes of the true time. I have never met or heard of a living mariner who has kept this traditional lore, no doubt it survives, wherever in northern latitudes small sailing vessels and unlettered sailors are found. It used to be employed by shepherds as well, and very likely still is today.



Positions of Kochab at midnight in relation to Polaris the year around

Thus, suppose we wish to tell time on a crisp autumn night in early November. Consulting the diagram, we find that Kochab touches Feet at midnight on 4 November. She will therefore be at West Arm at 6 P.M. about as early as she can be observed; at Line under West Arm (the

[8] A Fontoura da Costa, *A Marinharia dos Descobrimentos* (Lisbon, 1933), pp. 47-53. I am particularly indebted to this learned and lucid work, and to my conversations with its author, for opening up this entire subject.

diagonal sloping SW) at 9; at Line under East Arm (sloping SE) at 3 A.M.; and at East Arm at 6 A.M. In early June, on the contrary, we shall sight Kochab about 7 P.M. at East Shoulder. At 10 P.M. she will touch Head. At 1 A.M. she will be at West Shoulder and at 4 A.M. at West Arm.

A simple entry in Columbus's Journal of his First Voyage for 30 September 1492, which seems to have baffled all his translators, proves that he was familiar with this method of telling time at night. He writes (and Las Casas here makes a direct quotation from the original Journal):

> nota que las estrellas que se llaman las guardas, quando anochece, están junto al braço, de la parte de poniente, y, quando amanece, están en la línea de baxo del braço, al nordeste, que parece que en toda la noche no andan salvo tres líneas, que son .9. oras; y esto cada noche.[9]
>
> Note that the stars called the Guards, when night comes on, are next to the Arm on the W, and when dawn breaks are on the Line under the Arm to the NE; hence it appears that the whole night they move only three Lines, which are nine hours, and so every night.

The officers of the Hayden Planetarium in New York have kindly afforded me the means to check this observation of Columbus; for with a modern planetarium we can actually 'turn the clock back,' and observe the heavens as they were at any given hour of the day or night since the age of the pyramids. On 30 September 1492, Kochab reached Line under West Arm at 9 P.M. At midnight the Principal Guard was a slight distance west of Feet. And at about 5.30 A.M. she crossed Line under East Arm, which Columbus described as *al nordeste* because the α-β clock hand then pointed to the northeastern horizon. Thus Kochab did actually move three 'Lines' in about eight and a half hours. Columbus's purpose in this note doubtless was to show that the effective night was only nine hours long at that point of his voyage.

This is the only reference in Columbus's writings to telling time by Polaris and the Guards. He may have made constant use of this star clock, as did many seamen of his day, and for centuries thereafter; but I rather think that he did not do so, since later in the same year he thrice mistook one of the stars of the constellation Cepheus for Polaris when making observations for latitude, as will presently appear.

[9] *Raccolta di Documenti e Studi pubblicati dalla R. Commissione Colombiana* (Rome, 1892), Parte I, i, 11, l. 24. Here, as in other quotations from Spanish and Italian texts, the translations are my own.

COMPASS VARIATION

The second nautical use of Polaris, which Columbus is said to have invented, is to check variation of the compass. European seamen were already used to easterly variation, and were accustomed to check their compasses by comparing the north that the needle showed, with the bearing of Polaris, which most of them assumed to be true north—although in reality it marked true north only when Kochab was half way between Head and East Shoulder (lower transit), or half way from Line under West Arm to Feet (upper transit).[10]

There are three possible mentions of compass variation in Columbus's Journal of the First Voyage which may be considered together:

13 *September* 1492
Lat. 28° 15′ N, long. 29° W[11]

en este día, al comiençó de la noche, las agujas noruesteaban, y á la mañana nordesteaban algún tanto.

This day at the beginning of night the compass needles varied to the NW, and in the morning little to the NE.

Monday, 17 *September* 1492
Lat. 28° 13′ N, long. 36° 25′ W.

tomaron los pilotos el norte, marcándolo, y hallaron que las agujas noruesteaban una gran quarta; y temían los marineros y estaban penados, y no dezían de que. cognosciólo el almyrante, mandó que tornasen á marcar el norte, en amaneciendo, y hallaron qu'estaban buenas las agujas. la causa fué porque la estrella que parece haze movimiento, y no las agujas.

The pilots "took the North" in order to mark it, and found that the compass needles varied to the NW a full point; and the mariners took fright and were troubled and did not say why. The Admiral knew, and ordered that the North be marked again at dawn, and found that the needles were true. The cause was that the star moved and not the needles.

Sunday, 30 *September* 1492
Lat. 27° 15′ 30″ N, long. 51° 34′ W

también, en anocheciendo las agujas noruestean una quarta, y en amaneciendo están con la estrella justo; por lo qual parece que la estrella haze movimiento como las otras estrellas y las agujas piden siempre la verdad.

Also at nightfall the compass needles northwested one point and at dawn they were right on the [North] Star, from which it appears that the Star moves like the other stars, and the needles always point true.

[10] This is for 1500. For 1940, Polaris is at lower transit, when Kochab is 1 h. 10 m. (17° 30′) E of Head, and at upper transit when Kochab is the same distance W of Feet.

[11] The latitudes and longitudes are those calculated by Captain J. W. McElroy, whose article 'The Ocean Navigation of Columbus on his first voyage' will be published in a future number of THE AMERICAN NEPTUNE.

Although these three passages, especially the first, have often been quoted as proof that Columbus was the first to note westerly variation, they really show nothing of the sort. He discovered for himself something quite different;—the diurnal rotation of Polaris. The mistake arose because Ferdinand Columbus in quoting, and Navarrete in printing, the 13 September entry, believed that the last word was *noruesteaban* (northwested) instead of *nordesteaban* (northeasted). Ferdinand thought that the fleet had actually passed the agonic equator of no variation, and so claimed for his father the discovery of westerly variation. Las Casas's Abstract of Columbus's Journal (and his *Historia de las Indias* also), give the second verb as *nordesteaban*; and there seems no doubt that that is what Columbus himself recorded. For at 7 P.M. in mid-September 1492, Polaris lay almost due east of the Celestial Pole, and its polar distance that year was 3° 39′. According to Van Bemmelen's Isogonic chart for 1500[12] and Captain McElroy's plotting of the course, the fleet was then just about to cross the magnetic equator. Consequently the 'northwesting' of the needle that Columbus noted at dusk was merely the westerly distance of the pole from Polaris (3° 39′), and 'northeasting' before dawn meant that the North Star had moved over an equal distance west of the Celestial Pole. It *was* the star that moved and not the needles.

On Monday, September 17, Polaris's positions relative to ship's time had not changed appreciably, but the fleet that evening crossed the agonic line of 2° westerly variation. Accordingly at nightfall the needles pointed 3° 39′ + 2° or about half a compass point (not a full point as the pilots said), west of Polaris. At dawn when the needles pointed to 3° 39′−2°, this slight distance was not noticeable.

The Star did indeed move, but it had been doing that since the beginning of time; it was the change from easterly to westerly magnetic variation that 'troubled the mariners.' On 30 September the same thing happened again, and his observation was much more accurate. For, by Van Bemmelen's calculations, the westerly variation at the fleet's position that day was 7°, and Polaris had moved an hour since mid September. Consequently at nightfall the needles pointed 7° plus about 3° 30′, almost 11°, *west* of Polaris; and Columbus reports that the needles wested one compass point, which is 11° 15′. His observational error was only a fraction of a degree. Twelve hours later the needles would have pointed 7° minus 3° 30′, or about 3° 30′ *west* of the Star. Columbus reported them to be 'right on it,' an error of over three degrees. Of course

[12] W. Van Bemmelen, 'Die Abweichung der Magnetnadel,' chart for 1500 in Supplement to *Observations of Royal Magnetical and Meteorological Observatory at Batavia*, XXI (1899).

these two errors can be averaged or equaled by a slight alteration in our assumed hours of the Admiral's observations. Let us say that his average error was 2° 07′. Considering that the compass cards of that era were graduated only to full points of 11° 15′ each, this was remarkably good work.

Although the fact that Polaris did not exactly mark the Pole was noted as early as 320 B.C. by Pytheas, when her polar distance was about 13°,[13] that distance had so decreased in the course of centuries that many of the late medieval and early renaissance astronomers supposed the Star to be fixed on the Celestial Pole.[14] So Columbus's observation of the diurnal rotation had some merit, although for the time being he did not realize that he had passed into the zone of westerly variation.

Eventually Columbus did realize just that. In his Letter to the Sovereigns written during his Third Voyage in October 1498, he says that on earlier voyages he had discovered, upon passing the meridian 100 leagues west of the Azores, that 'the compass needles which formerly had northeasted, northwested a full compass point.'[15] And, later in the Third Voyage, when sailing from Margarita Island to Hispaniola, he suddenly noted a westerly variation of about 17°. On the night of 15-16 August, when hove-to in approximately latitude 12° N and longitude 65° W, the compass needle, which hitherto (he says) had not varied from true north, suddenly 'varied to the NW more than a point and a half and some needles varied to the NNW, which is two points.'[16] This observation I have checked by plotting that leg of the voyage, for which Columbus gives the courses and the distances; and found that it was correct. If he had not discovered this variation, and altered his course accordingly, he would have missed Hispaniola.

LATITUDE FROM POLARIS

The most important use of Polaris by mariners, one which has lasted through the centuries and is still in constant use on sailing and steam vessels today, is to determine latitude. It needs but a simple geometrical demonstration[17] to prove that the altitude of the elevated or Celestial Pole

[13] Richard H. Allen, *Star-Names and their Meanings* (1936 reprint), p. 454.

[14] Quotations in Magnaghi, op. cit., p. 484.

[15] Cecil Jane, op. cit., II, 27.

[16] 'Noruesteaba más de una quarta y media, y algunas agujas noruesteaban medio viento, que son dos quartas'—*Raccolta*, I, ii, 24, l. 8. The *medios ventos* were the points NNW, ESE, etc., between the cardinal points. This observation of the Admiral's was overlooked by Van Bemmelen, whose chart does not extend to that part of the Caribbean.

[17] See, for instance, S. T. S. Lecky, *'Wrinkles' in Practical Navigation* (1891), p. 244.

above the observer is equal to his latitude north of the equator. The Celestial Pole cannot be seen, but Polaris can, and its polar distance is so small—3° 39′ in 1492 and 1° 02′ in 1940—that by applying a small correction to the altitude of Polaris you have your latitude in a jiffy. This was the favorite and usual method by which mariners determined latitude in the fifteenth century. They preferred it to calculations from a meridional altitude of the sun, partly because of the difficulty, without an accurate timepiece, of determining when the sun is at its zenith; but mostly because a declination table was necessary to complete the process. No such table is known to have been printed before 1496,[18] and the process of applying declination to the sun's observed altitude and subtracting the result from 90° was and still is a stumbling-block to unlettered mariners. Moreover, a meridional sun altitude for latitude can be taken but once in twenty-four hours, whilst Polaris could be observed for that purpose at any time when the star was visible from twilight to dawn.[19]

Polaris observations had the further merit from the seaman's point of view that you couldn't go far wrong. The margin of possible error in the resulting latitude was slight. A correct altitude of the Star could not differ by more than 3° 39′ from the latitude of the observer in 1492; and a few simple rules gave him the small factor to apply, according to the position of the Principal Guard at the time of observation, in order to compute the correct latitude.

These required corrections were first printed (so far as we have any record) in the so-called 'Règlement de Munich,'[20] the *Regimento do Estrolabio e do Quadrante* printed, probably at Lisbon, in 1509. The positions of Kochab are the same that we have already described for telling time.

THIS IS THE REGIMENT OF THE NORTH STAR

When the Guards are on the West Arm the North Star stands above the Pole one degree and a half [Altitude —1.5° = Latitude]

[18] Lawrence C. Wroth, *The Way of a Ship* (Portland: The Southworth-Anthoensen Press, 1937), p. 30, rightly states that declination tables had been in existence since the time of Alfonso the Wise. But there is no evidence to show that these were used by mariners, or that even the Portuguese navigators trained in the school of the Infante Dom Henrique knew anything about them. It was a laborious process to obtain the sun's declination from the *Ephemerides* of Regiomontanus, a copy of which Columbus possessed.

[19] This is not true today, because (unless you are so fortunate as to possess a bubble sextant) the modern instrument requires a horizon, which usually you have only at twilight and dawn. But the quadrants and astrolabes used in Columbus's day were supposed to make their own horizons by hanging plumb, and so could be used at any hour when the star was visible; nor was any correction for height of eye necessary.

[20] So called because the only known example—not a first edition it seems—is in the Staatsbibliothek at Munich. It has been reproduced in facsimile by Dr. Joachim Bensaude as Vol. I of his *Histoire de la Science Nautique Portugaise* with the sub-title *Regimento do Estrolabio e do Quadrante* (Munich, 1914).

When the Guards are on the Line under the West [Arm] the North Star is above the Pole three degrees and a half [Altitude—3.5° = Latitude]

When the Guards are at the Foot, the Star is 3 degrees above the Pole [Altitude—3° = Latitude]

When the Guards are on the Line below the East Arm the Star is above the Pole half a degree [Altitude—0.5° = Latitude]

And when you take the altitude of the Star, and the Guards are in some one of these four positions where the Star is above the Pole, from the altitude that you take of the Star, you should know, you subtract as many degrees as the Star is above; and the degrees which remain are as many as you are removed from the equator.

These are the Four Positions in which the North Star is below the Pole

When the Guards are on the East Arm, the Star is below the Pole one degree and a half.

When the Guards are on the Line above the East Arm the Star is three degrees and a half below the Pole.

When the Guards are at the Head, the Star is below the Pole three degrees.

When the Guards are on the Line over the West Arm the Star is below the Pole half a degree.[21]

Similar directions follow for *adding* these corrections to the altitude in order to obtain latitude.

These rules are remarkably accurate, as Captain Fontoura da Costa has shown. They are based on the formula

$$\text{Latitude} = \text{Altitude}^{*} - \Delta \cos P$$

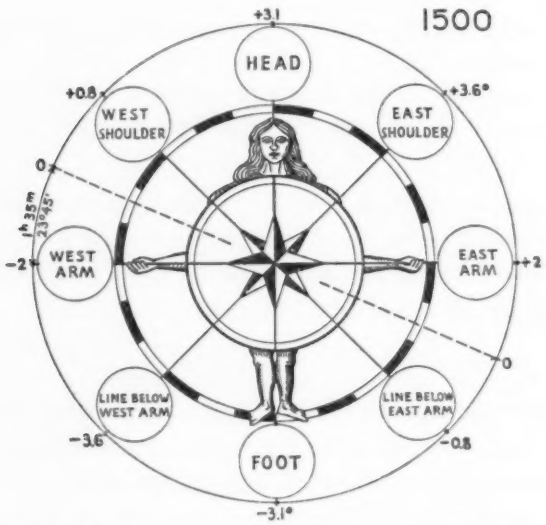
Δ being the polar distance of Polaris and P its hour angle. The other elements in the computation are the then polar distance of Kochab, 13° 36′, and the difference between the right ascensions of Polaris and Kochab, 220°.[22]

Taking the polar distance of Polaris in 1500 as 3° 42′, Captain Fontoura da Costa constructs this table of actual corrections for that year. The positions of zero correction, when Polaris is half-way between upper and lower transit, and therefore at the same altitude as the Pole, are 1 h 35 m (23° 45′) below East Arm, and the same distance above West Arm.

[21] Very likely these rules were formulated some years before 1509 when the book was printed; but Captain Fontoura da Costa's assumption (op. cit., pp. 49-50) that they were done by the junta of technicians called by D. João II in 1483-84 is not supported by any evidence; and the diagram in the 1509 *Règlement* showing altitudes of Polaris at the different positions of the Guards at Lisbon, does not agree with the rules.

[22] Fontoura da Costa, op. cit., p. 53; table of hour angles extended to two decimal points by Mr. Baker.

		Corrections for Latitude		
	'P'	Manual of	by formula	
Kochab (β) on	*(hour angle)*	*1509*	*$\Delta \cos P$*	*by Columbus*
West Arm	57° 40′ E	−1.5°	−1.98°	−2.5°
Line below W Arm	12° 40′ E	−3.5°	−3.61°	
Feet	32° 20′ W	−3.0°	−3.13°	
Line below E Arm	77° 20′ W	−0.5°	−0.81°	
East Arm	122° 20′ W	+1.5°	+1.98°	+2.5°
East Shoulder	167° 20′ W	+3.5°	+3.61°	
Head	147° 40′ W	+3.0°	+3.13°	
West Shoulder	102° 40′ W	+0.5°	+0.81°	



Corrections to observed altitudes of Polaris at different positions of Kochab to find latitude of observer

Thus the 1509 rules have a minimum error of a little over one-tenth of a degree (06′) and a maximum error of less than five-tenths of a degree (30′).

In the right hand column I have inserted the far less accurate corrections for the two 'arm' positions that Columbus worked out for himself in the West Indies in the course of his Second Voyage. No Journal for that voyage is extant, but the observations are quoted in his Letter to the Sovereigns on the Third Voyage, by way of contrast to those of 13-14 July 1498. The context shows that they were made in April 1494 or April

1496.[23] After passing the meridian of 100 leagues West of the Azores, he says,

hallo que la estrella del norte escrive un çírculo, el qual en el diámetro çinco grados, y, estando las guardas en el braço derecho, estonçes está la estrella en el más baxo, y se va alçando, fasta que llega al braço izquierdo; y estonçes está çinco grados, y de allí se va abaxando, fasta llegar á bolver otra vez al braço derecho.[24]

I found that the North Star described a circle which was five degrees in diameter, and when the Guards are on the Right Arm then stands the Star at its lowest point, and it continues to rise until they are in the Left Arm, and then it has five degrees, and from that point it sinks until they turn again to the Right Arm.

The same Polaris observations are summarized less accurately in Ferdinand Columbus's *Historie* or biography of his Father:[25]

. . . in the parallel of the Azores,[26] . . . when the Guards were on the Right Arm (which is on the east side), then the North Star was at its lowest point, and from that time began to rise, so that when the Guards were over the Head[27] then it was elevated by 21½°; and having once passed that point, began to descend the same 5° it had ascended. This he says he tried many times with great care, and with very convenient weather to verify it. . . .

The great mistake here is the assumption that Polaris had the same altitude as the Celestial Pole when Kochab was at Head. It is, therefore, certain that Columbus was ignorant in 1496 of the rules printed in 1509; but that ignorance is no reproach to him. Miss E. G. R. Taylor makes the gratuitous statement that the *Regimento* of 1509 'formed another stereotyped section of a pilot's training'; hence the Admiral's ignorance of it proved that he 'was not a professional seaman.'[28] There is no evidence that rules first printed in 1509 formed part of the training of pilots before 1492; quite the contrary. Celestial navigation was no part of a professional pilot's training in Columbus's day, nor for long after. It was practised only by men of learning such as mathematicians, astrologers and physicians, or by gentlemen of education like João de Castro and

[23] The observations show that when they were made the Guards swept north of Polaris from E to W, and were in the Head position at or near midnight. This then occurred only in mid-April. Columbus was in Spain in April 1492 and 1493. In mid-April 1494 he was at Isabella, Hispaniola, about to start for Cuba; in April 1495 he was on an incursion into the interior; in mid-April 1496 he was at Guadaloupe, on the return passage; after that in Spain. The observations therefore must then have been made in 1494 or 1496.

[24] Cecil Jane, op. cit., II, 27-29.

[25] Translated from Caddeo ed. (Milan, 1930), II, 82.

[26] Ferdinand's statement that they were made on the parallel of the *Astori* (Azores) must be a mistake. He was confused no doubt by his father saying that these observations were made west of the Azores.

[27] I take this to be a mistake of Ferdinand's for West Arm; which the quotation from the Letter to the Sovereigns shows it must have been. Columbus, of course, did not suppose that Polaris encircled the Celestial Pole four times every twenty-four hours.

[28] Introduction to Cecil Jane, op. cit., II, lxxxii.

João de Lisboa. Portuguese *roteiros* of the first half of the sixteenth century are full of complaints of the ignorance of pilots. If the professional pilots knew so much more than Columbus, how comes it that when he knew he was near the Azores in February 1493, they insisted they were further south and 150 leagues further east?[29] Why did Martin Alonso Pinzón make Bayona when he was aiming at Palos? Why did the pilots of Columbus on his Fourth Voyage predict that the fleet was due south of Puerto Rico, when it was actually on the meridian of Cienfuegos?[30] Why did the pilots of Cabral's fleet in 1500 place it 450 miles beyond the position that Master João the navigator assigned to it by a solar observation?[31] Moreover the rules of 1509 themselves did not become 'stereotyped.' A *Regimento* in Roger Barlow; 'Briefe Summe of Geographie,' a MS. of 1541, has factors to apply to observed altitudes of Polaris different from, and less accurate than those of 1509.[32]

It is true that Portuguese navigators had been calculating latitude from Polaris for some time before Columbus's First Voyage; but we have very little evidence of the results. Diogo Gomes in his narrative *de prima inventione Guineae*, relates that on his voyage to Guinea in 1462 he carried a quadrant, and recorded the altitude of the 'arctic pole' at various points. He found this a much more accurate method of plotting his distance along the African coast, than by chart, 'but when once you do get wrong, you do not recover your true position.'[33] Unfortunately we do not know how correct his observations were.

Yet if we cannot justly reproach Columbus for his ignorance in 1492 of rules printed in 1509, we stand amazed at the colossal inaccuracy of the latitude sights that he took from Polaris on the north coasts of Cuba and Hispaniola in November and December 1492.

Quoting first the two Cuban observations[34] from Las Casas's abstract of the Journal of the First Voyage:

[29] Journal of the First Voyage, 6, 7, 10, 15 February 1493.

[30] Cecil Jane, op. cit., II, 98-99. A typical professional Spanish pilot's performance was that of the *piloto mayor* of the Felipe Gutierrez voyage to Veragua in 1535. From Hispaniola he made Cape Honduras when intending to reach the coast of Veragua; and in attempting to retrieve his error touched the coast east of Nombre de Dios.

[31] W. B. Greenlee, ed., *Voyage of Pedro Alvares Cabral* (Hakluyt Society, 2d ser., LXXXI), p. 37.

[32] E. G. R. Taylor, *Tudor Geography, 1485-1583* (London, 1930), p. 54. L. Hogben, *Science for the Citizen*, p. 125. Oviedo, however, has the 1509 rules in lib. ii, ch. 11 of his *Historia General y Natural de las Indias* (1535).

[33] G. R. Crone, ed., *Voyages of Cadamosto and Other Documents* (Hakluyt Society, 2d ser., LXXX), pp. 101-02. Cadamosto and Pero da Sintra, on the other hand, wrote loosely of Polaris being "third of a lance" or "the height of a man" above the horizon. Id., pp. 61, 82.

[34] One might add a third, for the Abstract Journal for 30 October, the day he left Puerto de Mares (Gibara) for the first time, says, 'As it appeared to the Admiral, he was distant 42° from the equator, if the text is not corrupt whence I copied this.' But this I believe to be a remark interpolated by Las Casas, and based on the observation of 2 November at Puerto Gibara, not an independent observation.

2 *November* 1492, *at Puerto de Mares (Puerto Gibara, lat.* 21° 07′)

aquí tomó el almirante el altura con un quadrante esta noche, y halló qu'estaba .42. grados de la línea equinocial . . .

Here, this night, the Admiral took the altitude with a quadrant, and found that the distance from the equator was 42° . . .[35]

21 *November* 1492, *at sea (D. R. lat.* 20° 50′)

. . . aquí se halló el almirante en .42. grados de la línea equinocial, á la parte del norte, como en el puerto de Mares; pero aquí dize que tiene suspenso el quadrante hasta llegar á tierra, que lo adobe; por manera que le parecía que no devía distar tanto, y tenía razón, porque no era posible, como no estén estas yslas sino en [*blank*] grados. para creer qu'el quadrante andava bueno le movía ver, diz que, el norte tan alto como en Castilla, y si esto es verdad, mucho allegado y alto andava con la Florida . . .

. . . Here the admiral found that he was 42° from the equator, on the north side, as in the Puerto de Mares; but here he says that he had had the quadrant hung up until he reached land, to repair it, since it seemed to him that he couldn't be so far distant [from the equator], and he was right, for it was impossible, since these islands were not more than [*blank*] degrees. To believe that the quadrant was correct it moved him to observe that the North Star was as high as in Castile, and if this is the truth, he had come very near and was in the latitude of Florida.

No wonder that Las Casas expressed his incredulity, and in his *Historia* declared that the quadrant must be false, or the text corrupt by fault of the scribe.[36] The northeastern coast of Cuba where Columbus then was, is in about latitude 21° N. Latitude 42° N is that of Cape Cod.[37] Even some of the detractors of Columbus, like Vignaud, have been willing to give the Admiral the benefit of the doubt here, and assume that an unknown scribe is responsible for the colossal error. But can it be a scribe's error? I think not. In the first place, the same result (42°) is reported from observations on two different days, the second time at sea. Secondly, the Spanish '4' of that era cannot be confused with a '2'; and if it could, assuming Columbus had written '22,' the scribe would have made it '44.' Third, as we shall see, Columbus's observation at Hispaniola was not much better. And fourth, Columbus himself expressed dissatisfaction with the result and decided that his quadrant needed repairs. Yet

[35] Marginal note by Las Casas: 'esto es falso, porque no está Cuba sino en [*blank*] grados' ('it's false, because Cuba doesn't extend beyond . . . degrees'). And in the *Historia de las Indas* (lib. i, ch. 44, 1927 ed., I, 225), he says 'I believe that the text is false.'

[36] 'Debía ser falso el cuadrante, o está errada la letra por vicio del escribano, como suele muchas veces en cosas de grande importancia, acaecer.' Lib. i, ch. 45; 1927 ed., I, 228. Las Casas did not have the original holograph journal in his possession, but one of several copies that the Admiral had made for the Sovereigns and for his friends.

[37] Which the Spaniards considered, at the time Las Casas made this statement, to be part of Florida.

he excuses the result on the ground that Polaris stood high 'as in Castile'; which it was not. Seville is about in latitude 37° N, and the southernmost point of Castile just above latitude 36° N; but the place of his Cuban observations was latitude 21° N, within 10 minutes. Even the youngest novice of a star-gazer would see that Polaris hung considerably lower in Cuba than in Castile.

Columbus had other occasions to know that his latitude 42° was away off. He took his departure from Gomera in 28° north, and had steered west or south of west all the way to San Salvador, which he expressly declares to be in the same latitude as the island of Ferro in the Canaries (27° 46′ N).[38] Actually San Salvador crosses north latitude 24°; no serious error for that era. Since his first landfall the Admiral had made at least 150 miles of southing. How could he possibly accept that Cuba lay 14° north of the parallel where he conjectured that San Salvador lay? A latitude of 42° for Cuba did not make sense, even from Columbus's own point of view, and I believe that he knew that it did not.

Dr. Magnaghi, to whom it is unthinkable that Columbus could have made such colossal errors, has advanced the theory that the Admiral consciously falsified the latitudes of Cuba and Hispaniola in order to hoodwink possible rivals. In other words, if it were generally given out that the Indies lay between 36° and 42° North latitude, the Portuguese and other interlopers would attempt to buck the westerlies of the North Atlantic, and so get nowhere.[39] But Columbus names these latitudes in a confidential document intended for the eyes of his Sovereigns, and for nobody else. Moreover, in the Letter to Ferdinand and Isabella (commonly called the letter to Sanchis or to Santangel) dated 15 February 1493, which was promptly printed by the Sovereigns' command at Barcelona and broadcasted in numerous reprints and translations, Columbus revises the latitude of Cuba and Hispaniola some sixteen degrees downwards, stating that they lay in latitude 26° North.[40] That figure, while still inaccurate, would have enabled any navigator capable of following a latitude to pick up the Bahamas, and so uncover the secrets of the Spanish Indies. So Magnaghi's arguments will not hold water.

Now let us examine Columbus's Polaris observations in Hispaniola. On 13 December 1492, when anchored in Puerto de la Conception (Moustique Bay), in latitude 19° 55′ N, longitude 73° W, the Las Casas abstract of the Journal records:

[38] Journal of the First Voyage for 13 October 1492.

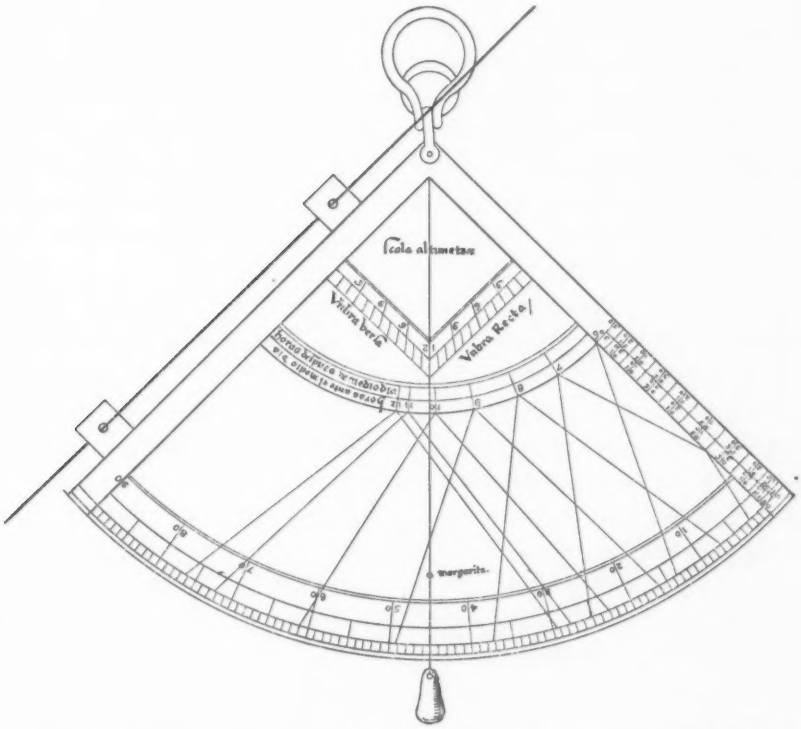
[39] Magnaghi, op. cit., pp. 492-93; also same *Bolletino* for June 1930, and discussion in *Geographical Journal*, LXXV (1930), 263 and LXXVI (1930), 179.

[40] Cecil Jane, op. cit., I, 14-15.

dize también que halló por el quadrante qu'estava de la línea equinocial .34. grados.

He says also that he found by the quadrant that he was distant from the equator 34 degrees.

This is about the latitude of Wilmington, North Carolina! Again, why should Columbus seriously consider accurate an observation that put him several degrees north of his Canarian departure?



Picture of a quadrant of Columbus's Day on the 'Weimar-Spanish' Map of 1527 from E. L. Stevenson, *Maps Illustrating Early Discovery and Exploration in America* (New Brunswick, 1903), No. 9

Original preserved in Grosherrocliche Bibliothek, Weimar, Germany

The explanation reads thus, translated: 'Sundial Quadrant of two lines which is calculated for a latitude of 37°, and which is used in this manner. Observe the place of the sun as indicated by the *margarita* (pearl) on the cord, after you have taken the sun through the pin-holes in the vanes. The *margarita* will show you the hour by following up the red hour lines (the diagonals) when the sun is in the northern signs of the zodiac, and by the black lines when it is in the southern signs. . . . By this Quadrant you can take the altitude of the sun or of any star in order to ascertain your position, going by sea or by the deserts. Similarly, you can ascertain the height of a tower or the width of a river or the distance of one coast from another, and for many other things. Thus, you only have to apply the declination to know the position of the sun.'

One absurd explanation of the Cuban latitudes by Navarrete must be mentioned if only because it has so often been quoted.[41] Navarrete says, 'the quadrant of that period measured double altitudes; consequently the 42° that he says was distant from the equator is reduced to 21° N latitude.'[42]

It is safe to say that no such quadrant ever existed. Navarrete, who had been a naval officer in his youth, was evidently confused by a dim memory of the Hadley quadrant then used at sea, which like all reflecting instruments, halves (not doubles) the angle; but the scale on the arc compensates for that. The quadrant of Columbus's day was a very simple instrument; a quarter-circle of hardwood or brass, with vanes along one edge through which the observer sighted the heavenly body, a plummet attached to the apex by a silk cord, and a scale of 90° on the arc, from which the altitude marked by the cord was read by a second observer at the moment when the first one sighted the Star through pinholes in the vanes. (It could also be used as a Gunter's quadrant or sun dial, but we need not discuss that here.) The quadrant was no use in a wind or on a tossing ship, and nothing smaller than a degree could be read from the arc. An error of five or six degrees would not be surprising. But how account for an error of 14° in Haiti and of 21° in Cuba? The quadrant scale could not have been that inaccurate. Columbus must have checked readings that appeared doubtful to him, and not relied on an illiterate assistant to read the scale.

The only conclusion I can draw is that Columbus picked the wrong star—one that on the north coast of Cuba was as high as Polaris in Castile. Consequently I have searched for a star that in latitude 21° N between 12 November and 13 December 1492 was about as high as Polaris in mid-Castile, whose azimuth in the early evening was almost due north, and whose altitude would be somewhere from 42° to 34°. The obvious candidates for this 'false Polaris' are the three stars α (Alderamin), β (Alfirk) and γ (Er Rai) of the constellation Cepheus, which in the northern sky appears almost directly over Polaris at dusk during November and early December.[43] Testing this hypothesis at the Hayden Planetarium: on 21 November 1492[44] at dusk (6 P.M.) α Cephei (Alderamin) was notice-

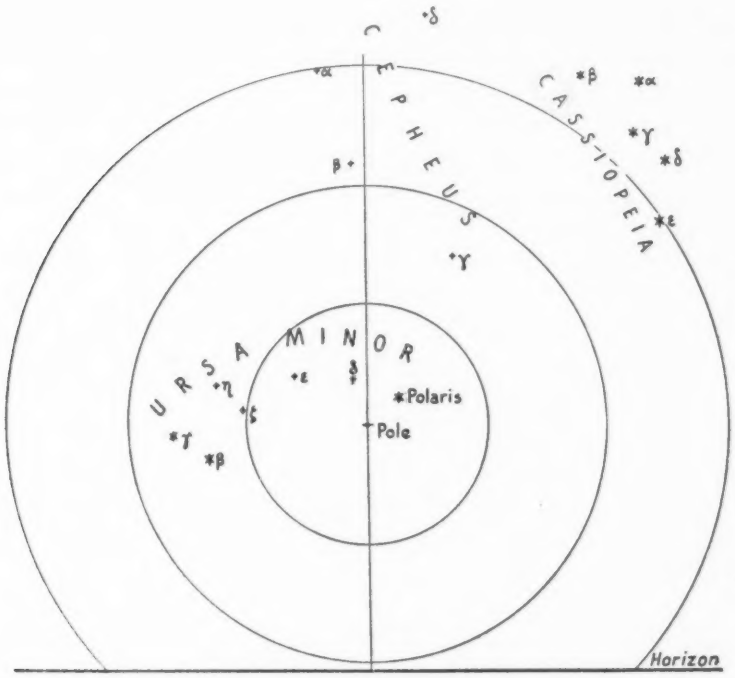
[41] E.g., by Lord Dunraven, on his study of Columbus's First Voyage in the appendix to Filson Young, *Christopher Columbus;* also G. Nunn, *Geographical Conceptions of Columbus*, p. 112.

[42] *Colección de los viages y descrubrimientos* (1825), I, 44 n.

[43] The magnitudes are α 2.60, β 3.33, γ 3.42. That of Polaris is 2.12; consequently α is the one most likely to be mistaken for Polaris.

[44] Mr. Baker has worked out the meridian altitudes on that date at lat. 21° N as α 51°, β 43°, γ 37°.

ably west of the meridian, and was too high to be reckoned at 42°; but β Cephei (Alfirk) was very near the meridian, with an altitude of 43°. An hour and a half later, at 7.30 P.M., β (Alfirk) had passed 11° W of the meridian, and was elevated about 41°, whilst γ (Er Rai) had almost reached the meridian, and was elevated 36° 30′.



The Northern Heavens at Dusk 21 November 1492 at latitude 21° north off Cuban Coast. The circles are respectively 10°, 20°, and 30° in diameter

The solution of the first half of our puzzle is clear. Columbus's 'Polaris' altitude of 42° on 21 November was a very accurate observation of β Cephei (Alfirk), made about 6.45 P.M. So too for 2 November, at about 7.15 P.M.

Now for the Haiti observations. On 13 December 1492, in latitude 20°, at dusk, the altitude of γ Cephei (Er Rai) was about 34°, and that of β Cephei (Alfirk) about 33°. Here γ was right on the meridian, and therefore likely to be picked up by the following compass needle. So Columbus's 'Polaris' altitude of 34° on 13 December was an accurate observation of γ Cephei (Er Rai)!

The Admiral, finding no friendly 'pointers' to guide him to Polaris (for Ursa Major had set with the sun), mistook β Cephei for her on 2 and 21 November, and γ Cephei for her on 13 December. Remember Columbus's statement of 21 November, that his supposed Polaris 'was as high as in Castile'; this proves that the star he observed then had an altitude not far from 40°.

How could even a dead-reckoning navigator have made such an error? We shall not give Columbus a fair 'break' by assuming a clear sky, which would have brought out the relative faintness of β Cephei (3.33) and of γ Cephei (3.42) in comparison with Polaris (2.12). His Journal shows that the season, on the north coasts of Cuba and Hispaniola, was unusually rainy. On 31 October 1492 'the wind had veered wholly to the N, and . . . the sky showed the wind blowing up.' On 1 November 1492 he 'found it getting cold.' A typical 'norther' was evidently making up, and he remained ten days in port. On 21 November he was experiencing variables from N to E, which would probably have been accompanied by a sky partly overcast. On 13 December at Moustique Bay, Haiti, the NE trades had already set in, but a 'norther' was just over; on the eighth 'in that harbor it rained heavily, with a very strong N wind,' and on the ninth 'it rained and the weather was wintry as in Castile in October.' It is, therefore, likely that on all three occasions Polaris was dimmed or wholly obscured by clouds or haze, and that the stars of Cepheus were the brightest to be seen in the direction of the compass needle.

It was, at best, a stupid error to make thrice in succession. Columbus should have observed the wide circle that his false Polaris made around the Pole, instead of simply catching her near the meridian shortly after nightfall; he should have picked up the real Polaris in the intervals of clear weather. But dead-reckoning navigators, such as Columbus was, are notoriously neglectful of stars. I dare say many Yankee skippers of the last century have made the same mistake he did, whence they reached that easy conclusion that I have heard on the lips of Down-Easters: 'star sights are no damn good.' Indeed I confess to having inadvertently 'shot' β Cephei myself on a hazy November dusk in 1939 around latitude 15° N; and so can well imagine that had the date been some four centuries earlier, I might have concluded that Polaris was playing strange tricks!

There are few other records of observations on Columbus's First Voyage. On 13 January 1493, when anchored at Samaná Bay, Hispaniola, the Admiral declares that he proposes to remain there until the seventeenth in order to observe a conjunction of Moon with Sun (i.e., New

Moon) and an opposition of Sun and Jupiter. This passage proves that he had aboard a copy of Regiomontanus's *Ephemerides* which predicted these phenomena.[45] But he sailed on the sixteenth, and records no observations on the seventeenth.

On 2 February 1493, when he was in about latitude 33° 45′ N the abstract Journal records:

> pareçióle la estrella del norte muy alta, como en el cabo de Sant Viceynte; no pudo tomar el altura con el astrolabio ni quadrante, porque la ola no le dió lugar.
>
> The North Star appeared very high as on Cape St. Vincent; couldn't take the altitude with the astrolabe or quadrant because the rolling wouldn't permit it.

This guess at the altitude of Polaris was not far wrong; the latitude of Cape St. Vincent is approximately 37° North. Otherwise the passage shows that Columbus was not equipped for celestial navigation at sea. Like most of the navigators of his day, his observations were made from the land, or when lying at anchor in a smooth harbor. Considering what results he obtained in Cuba and Hispaniola, one cannot believe that science lost much by the rolling of the *Niña*.

Nevertheless Columbus altered his opinion of the latitude of the 'Indies' before he reached home. In the Letter to the Sovereigns which he dated from the Azores on 15 February 1493, and dispatched after he had reached the Peninsula, he reports the latitude of his discoveries to be 26° North.[46] That is within two degrees of what he supposed that of San Salvador to be, on 13 October, assuming that he had a fairly correct knowledge of the latitude of Ferro, with which he compares it.[47] Moreover the island of Santa Maria, where he probably completed the Letter to the Sovereigns, lies just over 37° North latitude, and the Admiral knew from his dead reckoning that he had made considerable northing since taking his departure from Hispaniola. This revision of his faulty latitudes for the West Indies must have been made after reflection, very likely after discovering that he had observed the wrong star, and within five years he had again revised his estimate downward, to 24° North latitude.[48]

[45] There is a copy of the 1484 edition in the Harvard College Library. The 1474 edition has the same data.

[46] Cecil Jane, op. cit., I, 14-15.

[47] San Salvador, 24° 06′; Ferro, 27° 46′.

[48] Letter of 1498 to the Sovereigns, in *Raccolta*, Pt. I, vol. ii, 9, l. 4. He gives 24° N as the latitude of Isabella, Hispaniola, which actually lies a little under 20° N.

[The concluding section of this article will appear in the April issue of THE AMERICAN NEPTUNE]

American Naval Policy
1775-1776

BY WILLIAM BELL CLARK

NO subject has been more thoroughly muddled by historians than the naval policy of the thirteen United Colonies of North America during the first year of the American Revolution. Consequently, we have a popular conception of hardy Colonials sallying forth in armed vessels, indiscriminately called privateers, a few weeks after Concord and Lexington, and, in ever increasing numbers, preying vigorously thereafter upon all British commerce.

Such an impression, for all its alluring plausibility, is far from the truth. Instead, it was not until eleven months after 'the shot heard 'round the world,' that the Continental Congress authorized the extension of naval warfare against everything that flew the English flag. Washington's fleet, operating in New England waters in the fall and winter of 1775–1776, was in no way empowered to capture British merchantmen in general. Neither was the first Continental fleet, under Commodore Hopkins, which sailed from the Delaware in February 1776. Even the privateers of Massachusetts, authorized by the General Court, on 1 November 1775, were limited to operations against enemy naval vessels or merchantmen giving succour to the beleaguered port of Boston.

The actual date when a vigorous offensive was authorized against all the commerce of Great Britain, no matter where found on the high seas, was 23 March 1776. Strangely enough, historians have identified that date only as the one when Congress decided to permit privateering, and have overlooked the significance of the other resolutions passed at the same time.

Evolution of an aggressive naval policy in Congress was as deliberate and as cautious as the steps leading up to the Declaration of Independence, and took well nigh as long. It proceeded from no spontaneous outburst of naval enthusiasm. It moved, rather, on a cautious course, hedged about by the scruples of those who could not bring themselves to an immediate break with the Mother Country, and hampered by others who

were unalterably opposed to any severance from the Crown. Despite its halting, hesitous progress, its development was logical, and is defined clearly in the journals of the Continental Congress, and the letters of those ardent patriots, who visioned, in aggressiveness at sea, another stage in the journey toward their cherished goal of independence.

Earliest advocates of the use of sea-power, although only as a defensive measure, were Christopher Gadsden, delegate to the second Continental Congress from South Carolina, and James Warren, member of the Massachusetts Provincial Congress. At least, they were the first to be articulate on the subject. Gadsden's views were embodied in a letter, which John Adams wrote from Philadelphia either in late May or very early June 1775, to Elbridge Gerry, another member of the Massachusetts Congress. While the letter was in transit, on 7 June, Warren introduced into the Provincial Congress 'a project of mine for a fleet.'[1] It provided for the appointment of a committee 'to consider the expediency of establishing a number of small armed vessels, to cruise on our sea coasts, for the protection of our trade and the annoyance of our enemies.'[2]

John Adams's letter has not come to light, but it arrived at Watertown while the report of the committee was being considered, and Warren seized upon it to strengthen his case, as he explained to Adams a little later:

> I always forgot to tell you that I have seen your letter to Gerry, expressing Mr. Gadsden's opinion about fixing out armed vessels and setting up for a naval power. I thought it very happy to have so great an authority confirming my own sentiments, and having proposed in Congress just such a project the beginning of the session, borrowed the letter to support it.[3]

Even with 'so great an authority' to back him, Warren's project failed. True, the Massachusetts Congress went so far, on 20 June, as to pass a resolution authorizing six armed vessels 'for the protection of our Trade and Sea Coasts against the depredations and Piracies of our Enemies and for their Annoyance and Capture or destruction.' Before the day ended, however, that august body hedged, and ordered the resolution 'to subside for the present.'[4] Lack of powder was the ostensible reason given for the about-face, but Warren admitted he had strong opposition from the moderates in Congress. Foiled at home, he passed the idea along to Adams for Continental Congress consideration:

[1] W. C. Ford, *Warren-Adams Letters* (Boston: Massachusetts Historical Society, 1917), I, 78.
[2] *Journal of the Provincial Congress of Massachusetts in* 1774 *and* 1775 (Boston, 1838).
[3] *Warren-Adams Letters*, I, 81.
[4] State House, Boston, *Massachusetts Archives*, 138, fol. 165.

Ten very good going sloops, from 10 to 16 guns, I am persuaded, would clear our coasts. What would 40 such be to the Continent. Such a determination might make a good figure on your Journals.[5]

Such a resolution might, indeed, have made 'a good figure' on the journals of Congress, but Adams, Gadsden, and the others, who wanted to make a naval beginning of some sort, were powerless. The appeasers, headed by John Dickinson, of Pennsylvania, were in the majority. They held the fatuous idea that George III was unaware of the oppressions by his Ministers and his Parliament, and would respond to an appeal from his faithful subjects in North America. So precious days were lost in drawing up a petition to the King. This same conciliatory gesture to the Crown blocked the hopes of the reactionaries in Congress to invite foreign trade to the ports of the continent. The conservatives would have nothing of such a proposal, because, even the least acute among them could see that to invite trade necessitated its protection, and to protect it required ships of war. The good King could not be mollified, they reasoned, by Congress approaching him with an olive branch in one hand, and a naval force in the other. Unable to rout the free traders, the Dickinson group did the next best thing; debate and defer action until, in the closing days of the session, the vexacious subject was postponed until Congress should reconvene in the fall.[6] When it finally adjourned, on 1 August, the second Continental Congress had made but one faint gesture toward Adams's goal of beginning a naval power. On 18 July, it was resolved:

That each colony, at their own expence, make such provisions by armed vessels, or otherwise, as their respective assemblies, conventions, or committees of safety shall judge expedient and suitable to their circumstances and situation for the protection of their harbours and navigation on their sea coasts, against all unlawful invasions, attacks, and depredations from cutters and ships of war.[7]

John Adams, on 23 and 24 July, raged to James Warren over the futility of all the congressional measures:

We have passed a Resolution that each Colony make such Provisions as it thinks proper and can afford for defending their Trade in Harbours Rivers and on the Sea Coast, against Cutters and Tenders. We have had in Contemplation a Resolution to invite all Nations to bring their Commodities to Market here, and like Fools have lost it for the present. . . .

[5] *Warren-Adams Letters*, I, 78.

[6] C. F. Adams, *Works of John Adams* (Boston, 1850), II, 503, 504: W. C. Ford, *Works of Thomas Jefferson* (New York, 1904), I, 17.

[7] W. C. Ford, *Journal of the Continental Congress*, 1775-1776 (Washington, 1905, 1906), II and III. Journal of Congress references are not further noted, as dates are given in text.

We ought to have had in our hands, a month ago, the whole legislative, executive, and judicial of the whole continent, and have completely modelled a constitution; to have raised a naval power, and opened all our ports wide; to have arrested every friend of government on the continent and held them as hostages for the poor victims in Boston, and then opened the door as wide as possible for peace and reconciliation. After this, they might have petitioned, negotiated, addressed, &c. as they would.[8]

Nobody in the New England states was satisfied with the measures taken at Philadelphia, least of all the Rhode Island Assembly. That body already had anticipated the resolution to defend its ports and harbors by instructing its Committee of Safety, on 21 June, 'to charter two suitable vessels, for the use of the colony, and fit out the same in the best manner, to protect the trade of this colony.'[9] Now, on 26 August, protesting its earnest desire for a restoration of happy comradeship between Great Britain and her colonies, the Assembly forcefully instructed its delegates, when the Continental Congress next convened, to press for the continuance of 'this just and necessary war' until 'peace be restored upon constitutional principles.' To achieve this end, Rhode Island envisioned the utilization of sea-power:

. . . this Assembly is persuaded, that the building and equipping an American fleet, as soon as possible, would greatly and essentially conduce to the preservation of the lives, liberty and property of the good people of these Colonies and therefore instruct their delegates to use their whole influence at the ensuing congress for building at the Continental expence a fleet of sufficient force for the protection of these colonies, and for employing them in such manner and places as will most effectually annoy our enemies, and contribute to the common defence of these colonies. . . .[10]

Here was a conception of an aggressive sea policy that stepped beyond the ideas so far advanced by Gadsden, Adams and Warren. The delegates rode off to Philadelphia with the resolution, but the third Continental Congress, scheduled to assemble on 5 September, was without a quorum of colonies until 13 September, and too overburdened with interim problems to hear the Rhode Islanders until 3 October.

Meanwhile, on 2 September, George Washington, acting purely in his capacity of commander-in-chief of the army, determined upon a naval effort of his own. With the operation of Washington's fleet off Boston we are not concerned, but with his conception of the policy to be employed we are. From the beginning and consistently through the months that followed, he limited his captains to certain objectives. Take the instructions

[8] *Warren-Adams Letters*, I, 87-89.

[9] J. R. Bartlett, *Records of the Colony of Rhode Island* (Providence, 1862), VII, 346, 347.

[10] Ibid, 371.

to Nicholson Broughton, the first officer commissioned to go to sea in one of the general's armed vessels:

> You are to proceed, as commander of said Schooner, immediately on a cruise against such vessels as may be found on the high seas or elsewhere, bound inwards and outwards, to or from Boston, in the service of the Ministerial Army, and to take and seize all such vessels, laden with soldiers, arms, ammunition or provisions, for or from said Army, or which you shall have good reason to suspect are in such service.
>
> You are particularly charged to avoid any engagement with any armed vessel of the enemy, though you may be equal in strength, or may have some small advantage; the design of this enterprise being to intercept supplies of the enemy, which will be defeated by your running into unnecessary engagements.

Not an aggressive policy, to be sure, and designed primarily to divert Boston-bound supplies to the necessitous Continental army. Even recaptures were to be handled cautiously. They could not be considered as prizes, but Washington would recommend it to the American owners 'to make a suitable compensation' to those who retook them. The captors' share would be one-third of the value of cargoes of all legitimate prizes, excluding military and naval stores and the vessels themselves, which were reserved for the public. Prisoners were to retain their personal money and apparel, and to be sent to headquarters.[11]

That vessels carrying troops or supplies were to be the only objectives, the general made even clearer in supplemental orders to two of his captains sent in armed vessels into Nova Scotian waters in October. His instructions read:

> Should you meet with any vessel, the property of the inhabitants of Canada, not employed in any respect in the service of the Ministerial Army, you are to treat such vessels with all kindness, and by no means suffer them to be injured or molested.[12]

Outfitting a fleet had raised another problem — how to proceed against prizes that might be taken. His crews were already promised one-third of the value of each cargo, excluding military and naval stores. This meant a cargo must be sold before anything could be realized for distribution to the captors. Legalizing condemnations and sales was imperative, and, realizing his own lack of authority, he passed his perplexity along, on 5 October, in a letter to the Continental Congress:

> I shall now beg leave to request the determination of Congress, as to the property and disposal of such vessels and cargoes, as are designed for the supply of the enemy, and may fall into our hands . . . I am the more induced to request this determination

[11] Library of Congress, Washington, *Washington Papers*, B, I, fol. 11.
[12] Ibid, 41.

may be speedy, as I have directed three vessels to be equipped in order to cut off the supplies; and from the number of vessels hourly arriving, it may become an object of some importance. In the disposal of these captures for the encouragement of the officers and men, I have allowed them one third of the cargoes, except military stores, which, with the vessel, are to be reserved for the public use.[13]

Other complications arose which even a committee of Congress, visiting the army later in October, could not solve. In a conference with Washington, the committee approved his naval step, but numerous questions remained unanswered, namely:

> In what light are Vessels, which are made captures of, with their Cargoes, to be considered? that is, what part is to be assigned the captors, in the pay of the Continent, and where Vessels are fitted out at publick expence, and how is the residue of the Cargo and Vessel to be disposed of.
>
> The instructions given by the General, to the Armed Vessels now out, being considered, were approved, except that one-third of the whole capture be allowed the Officers and men, without any reserve.
>
> What is to be done with Prisoners taken in transports by Vessels, either in the Continental pay or others? Are they to be detained as Prisoners, or released? If the former, which distinctions are to be made between those taken by the Continental vessels and others? in respect to the General's cognizance of them is meant?[14]

This latter query was prompted by the exploits of some New Englanders who had gone out in whaleboats and other small craft and had taken supply vessels which stood too close in shore.[15] The whole presented some nice points. Certainly, the Continental Fathers would either have to disavow the general's use of a sea force, or, by legislation, take over the whole matter of a naval policy; for the committee's approval carried with it only an agreement 'to recommend it to the Congress.'

When John Adams had reached Philadelphia, in September, for the opening of the third Continental Congress, he had begun a systematic campaign among the delegates to break down the views of the moderates. His arguments were that permission should be given immediately to merchants to fit out privateers and make reprisals on the enemy, that Congress ought to arm ships and lay the foundation of a navy, that an invitation to foreign nations to trade would assure ammunition and supplies, and that all these measures, if pursued with resolution, would win the friendship of France. Frankly, he was urging actions he knew would lead inevitably to independence. He found plenty of opposition, the least

[13] Ibid, *Papers of the Continental Congress*, 152, I, fol. 181.

[14] P. Force, *American Archives* (Washington, 1837), 4th, III, 1161, 1162.

[15] A. French, *The First Year of the American Revolution* (Boston, 1934), pp. 170, 360, 361: Library of Congress, *Papers of the Continental Congress*, 152, I, fol. 197.

conservative view being well expressed by John Houstoun, one of the Georgia delegates, who

> was for acting offensively next spring or this fall, if the petition [to the King] was rejected or neglected. If it was not answered, and favorably answered, he would be for acting against Britain and Britons, as in open war . . . fit privateers and take their ships anywhere.[16]

In other words, temporize, and, to John Adams's way of thinking, lose precious time. Hence, when the Rhode Island recommendation was read in Congress, on 3 October, it was no surprise to find a motion prevailing which postponed consideration for three days. Two days later several letters were received from London telling of two unarmed brigs which had sailed for Quebec laden with powder. With no relation to the Rhode Island proposal for a fleet, a resolution was introduced, on 5 October, for the appointment of a committee of three to prepare a plan for intercepting these vessels. The committee was back with its report in a few hours.

Recommendations were that Washington apply to the Massachusetts Congress for two armed vessels to intercept the powder brigs, and 'any other transports laden with ammunition, cloathing or other stores, for the use of the ministerial army or navy in America'; that the governors of Rhode Island and Connecticut be asked to send armed vessels out with the same objective, and that all vessels 'be on the continental risque and pay, during their being so employed.' It provided nothing more drastic than Washington, unknown to Congress, had been doing for more than a month, but opposition was loud and vehement. Said John Adams:

> It was, however, represented as the most wild, visionary, mad project that ever had been imagined; and what was more profound and remote, it was said it would ruin the character and corrupt the morals of all our seamen. It would make them selfish, piratical, mercenary, bent wholly upon plunder, &c. &c. These formidable arguments and this terrible rhetoric were answered by us by the best reasons, we could allege, and the great advantage of distressing the enemy, supplying ourselves, and beginning a system of maritime and naval operations, were represented in colors as glowing and animated.[17]

The resolution carried, and the committee, emboldened by success, was back the next day with an additional report, which was directed 'to lie on the table, for the perusal of the members.' It contained a recommendation that Congress fit out two armed vessels and appoint a committee to estimate expense and contract with proper persons to equip them.

[16] *Works of John Adams*, II, 428.
[17] Ibid, III, 7, 8.

On 7 October, the Rhode Island recommendation came up for consideration, and a violent debate ensued. Samuel Chase, of Maryland, denounced it furiously, claiming it was a hair-brained idea, and its execution would mortgage the entire continent. John Joachim Zubly, of Georgia, implied:

> If the plans of some gentlemen are to take place, an American fleet must be part of it, extravagant as it is.

Zubly sensed the New England determination for independence as did many other of the moderates. Even Gadsden, one of the earliest exponents of the use of sea-power, admitted he was opposed to the extensiveness of the Rhode Island plan, but 'it is absolutely necessary that some plan of defence by sea should be adopted.' Several opponents of a navy wanted to know immediately the number of vessels to be built, and how much they would cost. To Silas Deane, of Connecticut, that seemed like appointing a man 'to tell the dream and the interpretation of it.' Gadsden agreed, commenting that the design of the opposition was to throw the recommendation into ridicule. He was firm upon its consideration out of respect 'to the Colony of Rhode Island, who desired it.' After much skirmishing, further consideration was deferred to 16 October, but John Adams felt much progress had been made.[18]

The two measures for a naval establishment were never considered in the same session. From a study of the Journal of Congress, it is apparent that this was deliberate on the part of the proponents of sea-power. They regarded the Rhode Island recommendation as a permanent measure; the resolution to intercept supply ships and transports as an expediency. Their strategy was to press the expediency measure. By doing so, and enlarging its original intent to include Congress-owned and operated armed vessels, they were convinced the moderates eventually could be committed to a naval program. The matter of Washington's fleet, too, was of great importance in this skilful maneuver. Once Congress approved the general's plan of armed vessels, and took upon itself the legislation needed to legalize captures, another step toward an expanding navy — and toward independence — would be completed.

Hence, during the remainder of October and all of November, the Rhode Island recommendations were adroitly withheld from discussion. They were to be debated on 16 October, but were deliberately kept off the floor. A month later, Samuel Ward, of Rhode Island, wrote:

[18] Ibid, II, 463, 464.

> Our instructions for an American fleet has been long upon the table. When it was first presented, it was looked upon as perfectly chimerical; but gentlemen now consider it in a very different light. It is this day to be taken into consideration, and I have great hopes of carrying it. Dr. [Benjamin] Franklin, and Colonel [Richard Henry] Lee, the two Adamses, and many others will support it.[19]

But Ward and his backers, after a tentative feeler, realized the time was not yet ripe, and again withdrew it.

The expediency measure, meanwhile, and the problem of Washington's fleet had moved exactly as had been hoped. On 13 October, Congress had authorized a new committee of three to prepare two vessels of war, one of which was 'to cruise eastward, for intercepting such transports as may be laden with warlike stores and other supplies for our enemies, and for such other purpose as the Congress shall direct.' On 30 October, it had created the first Naval Committee of seven members, and added two more vessels to the proposed fleet. On this Naval Committee were John Adams, Christopher Gadsden and five others who felt just as strongly about the need of a beginning at sea. The resolutions provided that the vessels were 'to be employed in such manner, for the protection and defence of the united Colonies, as the Congress shall hereafter direct.' This decision superseded the instruction to send one cruizing to the eastward for transports, as Washington had already dispatched two of his own armed vessels on that mission. It left the policy involving the utilization of the new fleet to a future date.

While the committee which had conferred with Washington at camp reported to Congress on 2 November, army matters came first. It was not until 17 November, after the general had written several more letters on the subject of prizes, that a committee of seven was appointed to consider his request, and the recommendations and questions of the committee he had met with at Cambridge. John Adams and Benjamin Franklin were of the seven, who, on 25 November, brought in a report which Adams stated contained 'the true origin and foundation of the American navy.'[20] Significant and important the resolutions were, but his high claim for them is scarcely warranted. They did, however, contain the first expression of a continental naval policy.

In a lengthy preamble, the committee pointed to the lawless seizure by British ships of war of American trading vessels, and the rifling of their cargoes in Boston; to the burning of Falmouth (now Portland, Maine) as a demonstration of the general ruthlessness of his majesty's captains; and

[19] C. C. Burnett, *Letters of Members of the Continental Congress* (Washington, 1901), I, 256.
[20] *Works of John Adams*, II, 11.

to the action of the 'good people' of the continent in fitting out armed vessels and ships of force to prevent repetition of these unprovoked attacks. For the protection legally of these 'good people,' the committee believed laws should be made to regulate, and tribunals erected to determine the propriety of captures. The 'good people' involved were Washington, who now had six armed vessels operating; the Massachusetts Congress, which on 1 November, had authorized a limited sort of privateering against transport and provision vessels; the Congress itself, which had four vessels fitting out; various Colonies, which had created naval defence armaments, and some stalwart New England patriots, who had taken the law into their own hands.

The policy this committee recommended and Congress adopted that day was defined in a series of numbered resolutions providing:

First, That any British vessel of war taken while employed 'in the present cruel and unjust war' should be seized and forfeited to the United Colonies.

Second, That all transport, provision or supply vessels carrying troops or necessaries to the British land or naval forces should, when captured, be forfeited and confiscated. Originally this measure had a qualification limiting the seizure to cargoes only, save where the vessel belonged to an inhabitant of North America. When Washington reported, on 4 December, that transports were now being armed in England, Congress, on 19 December, restored the resolution to the form as given above.

Third, That all American armed vessels must have either a Continental commission, or one supplied by a colony.

Fourth, That each colony set up courts of admiralty for the trial of prizes by the jury system.

Fifth, That prosecutions must commence in the courts of a colony in whose waters the captures were made, or, if taken on the high seas, in the most convenient court.

Sixth, That appeals from admiralty court decisions could be made to Congress, but must be demanded within five days of the definitive sentence.

Seventh, That prizes taken by privately owned vessels (privateers) should go entirely to the captors; but those taken by Continental or colonial armed vessels should be divided, one-third to the captors and two-thirds to the Continent or colony, as the case might be. The exception was a vessel of war, which would go, one-half to the captors, and the other half to Continent or colony.

Eighth, That the prizes taken by Washington's fleet were justifiable, and his distribution of one-third to the captors was approved.

Two additional resolutions, approved 2 December, completed the legislative program. They provided:

[Ninth,] That all persons taken in arms on any prize, whether by Continental vessel or other, were to be deemed prisoners of war.

[Tenth,] That the Congress approve of the general's step in fitting out armed vessels to intercept the enemy's supplies.

These ten resolutions, along with Continental naval commissions to replace the army commissions Washington previously had used, were sent off to Cambridge on 2 December.[21] Three days later, Congress solved the matter of recaptures by resolving that recaptors should have, in lieu of salvage, one-eighth part of the value of a recapture if in the enemy's possession one day; one-fifth part, if two days in the hands of the enemy; one-third part, if three or four days, and one-half, if more than four days. If between capture and recapture, the vessels should have been condemned in an admiralty court, then the whole went to the captors. Division of the shares in each case was to follow the seventh resolution of 25 November.

Congress considered all problems well answered, but, amusingly enough, had failed to advise the general upon the one point he had repeatedly queried them; namely, how should he proceed against the vessels already taken by his cruisers. He advised, on 14 December:

> The resolves relative to captures made by Continental armed vessels only want a court established to make them complete.[22]

This was settled, on 20 December, by authorizing him to proceed 'by the rules of the law of Nations' against all his prizes in the new admiralty courts to be set up in Massachusetts.

Before this, the Rhode Island recommendation had had its day. With opposition dwindling — it could not have been otherwise with the myriad of naval resolves Congress had become involved in through the expediency fleet and Washington's armed vessels — the question of an American fleet was re-introduced on Saturday, 9 December, and deferred to Monday for action, when it was

> Resolved, That a Committee be appointed to devise ways and means for furnishing these colonies with a naval armament, and report with all convenient speed. That the Committee consist of a member from each Colony.

[21] Library of Congress, *Washington Papers*, 89, fol. 113.

[22] Ibid, *Papers of the Continental Congress*, 152, I, fol. 339.

Samuel Adams was the member from Massachusetts, but Samuel and John thought alike on all matters. Others included five of the seven members of the Naval Committee. No committee ever functioned faster, and the statistics, presented in its report made two days later, indicate that the proponents of sea-power had not been sitting idly waiting while the Rhode Island recommendation hung in abeyance. The report, in a nutshell, provided for the building of thirteen frigates, with all materials to be furnished by the colonies except sails and powder, and a committee to be appointed to carry on the work. Congress was urged to import immediately 7,500 pieces of duck and 100 tons of powder.

The resolutions were adopted – there is no record of a debate of any moment; the Secret Committee was directed to procure sail cloth and powder, and the election of a permanent committee deferred to the next day. On 14 December, the Marine Committee, as it was thereafter termed, was chosen – one from each colony – and again five of the Naval Committee were named to membership. This new committee did not immediately supersede the other, as, on 25 January 1776, Congress resolved that the direction of the expediency fleet fitted out by the Naval Committee be left to that body.

For all of its naval commitments – a fleet formed under Commodore Esek Hopkins, armed vessels operating under Washington, and thirteen frigates to be constructed—Congress, as the year 1776 dawned, maintained its defensive naval policy. Operations of its war vessels and those of the various colonies were limited to protection of American ports, and capture of British ships of war and any craft carrying troops, munitions, supplies or provisions to the enemy. For example, the instructions to Hopkins which read in part:

> As a part and most important part of defence, the Continental Congress have judged it necessary to fit out several Armed Vessels, which they have put under your Command . . . that by your Valour, Skill and diligence . . . our unnatural Enemies may meet with all possible distress on the Sea.

From such a preamble might be expected an exhortation to smite the British trade wherever it might be found. Not so. He was first, if he believed himself strong enough, to attack the British squadron in Chesapeake bay; second, to make himself 'Master of such forces as the Enemy may have both in North and South Carolina'; and, third, to proceed to Rhode Island and 'take and destroy all the Enemies Naval force that you may find there.' Continuing:

You are also to seize and make a prize of all such Transport Ships and other Vessels as may be found carrying Supplies of any kind to or any way aiding or assisting our Enemies.

Latitude was given him, if the definite program could not be accomplished, 'to follow such Courses as your best Judgment shall Suggest to you as most useful to the American cause and to distress the Enemy by all means in your power.'[23] That sounded like widened powers, but it must be remembered that 'Enemy' had been clearly defined, on 25 November, by Congress — British ships of war and transports and other vessels supplying the British armies and fleet.

Washington's captains, given new cruizing orders in January, were restricted to the same type of captures, and their instructions differed only in phraseology from the first orders issued to Nicholson Broughton the preceding September.[24]

Actually, therefore, after three months of deliberation, Congress had committed itself to the naval policy the general had originally conceived, plus the decision to attack enemy naval vessels on the American coast.

The members of Congress favoring independence, and their numbers were increased with the arrival of newly elected delegates in February 1776, were not content to let this policy remain largely defensive. Because they were still a minority, their tactics were not aggressive, but they were consistent in pushing measures that would commit the Congress to acts leading inevitably to a declaration of freedom from the Mother Country. Free trade with other European countries, which had been debated fruitlessly for months, was the principal vehicle employed, and with it was the corollary of letters and marque and privateering. Trade could only be established with other nations if merchant ships could be armed, and there was little distinction in congressional minds between an armed merchantman (letter of marque) which could defend itself and take prizes, and a private vessel of war (privateer) which was no cargo carrier, but designed to prey upon enemy commerce.[25]

Privateering had been favored by most of those who wanted sea-power, and who realized that Continental and colonial ships of war could never be commissioned in sufficient numbers to combat seriously the overwhelming strength of the British navy. But privateering would have to be made lucrative to the individual owner, and this could not be effected by confining the prey to British supply and provision ships in American

[23] Ibid, 58, fol. 239.

[24] Ibid, *Washington Papers*, B, I, fol. 77, 85.

[25] *Works of John Adams*, III, 29.

waters. To be successful, it would have to be unrestricted, and the same latitude naturally would have to be given Continental and colony armed vessels. Hence, privateering, if adopted, would throw off the defensive shackles now hampering the American naval effort. George Wythe, of Virginia, put it bluntly in Congress on 16 February:

> Merchants will not export our produce, unless they get a profit. We might get some of our produce to market by authorizing adventurers to arm themselves, and giving letters of marque, make reprisals. . . . We should encourage our fleet. I am convinced that our fleet may become as formidable as we wish to make it. . . . Why should we be so fond of calling ourselves dutiful subjects? We must declare ourselves a free people.[26]

Strong as the statement was, it fell still upon unresponsive ears. John Adams analyzed the general attitude in his autobiography:

> There was, however, still a majority of members who were either determined against all measures preparatory to independence, or yet too timorous and wavering to venture on any decisive steps. We therefore could do nothing but keep our eyes fixed on the great objects of free trade, new governments, and independence of the United States, and seize every opening opportunity of advancing step by step in our progress. Our opponents were not less vigilant in seizing on every excuse for delay.[27]

Pressure from the outside finally brought results which the orators for sea-power could not secure from the floor. Merchants, traders and others of Philadelphia presented a memorial, on 1 March, asking for permission to equip privateers. The Committee of Inspection of Accomac county, Virginia, followed with a resolution to the same effect on 4 March. Edmund Custis, of Virginia, and the Committee of Northampton county, Virginia, by letter made similar requests. Joseph Blewer and Daniel Robinson, Philadelphia merchants, added their prayerful petition that the Congress issue letters of marque and privateering commissions. Irresolute members began to gain backbone through the public demand. Opposition dwindled, or was over-ridden in three days of debate in committee of the whole.

Finally, on 19 March, a series of resolutions were framed and approved, which presaged a radical change in naval policy. So important were they regarded that a committee of three was appointed to prepare a declaration introducing them, and John Adams, on 21 March, while this committee was at work, voiced his delight in a letter to James Warren:

[26] Ibid, II, 486.
[27] Ibid, III, 31.

You will soon see a sett of Resolutions, which will please you – the Continental Vessells the Provincial Vessels and Letters of Marque and Privateers will be let loose upon British Trade.[28]

The declaration, prepared by George Wythe, of Virginia, John Jay, of New York, and James Wilson, of Pennsylvania, a radical and two moderates, was a tirade against the entire British nation, who, privately and publicly, were charged with everything from open robbery to arson and murder. They had violated the commandments of God and every principle of right and justice entertained by all nations, savage or civilized. It was impossible, the declaration concluded, for 'the People of America to subsist under such continual Ravages without making some Reprisals.' It was presented on 22 March, and was just too scathing to be accepted in toto.[29] Polished a bit by some of the congressional rhetoricians, it was passed on 23 March, as a fitting introduction to the previously approved resolutions of 19 March, which were reaffirmed and the whole ordered printed. First of the resolutions was concise:

Resolved, That the inhabitants of these colonies be permitted to fit out armed vessels to cruize on the enemies of these United Colonies.

Historians seem to have read that far, and no further, and to have cited 23 March only as the day privateering was authorized. They have overlooked the three succeeding measures, each of which began in identical fashion, thus:

Resolved, that all ships and other vessels, their tackle, apparel and furniture, and all goods, wares and merchandizes, belonging to any inhabitant or inhabitants of Great Britain. . . .

From that point they differ. The first resolution authorized the capture of all vessels, as outlined above, by privateers; the second, by Continental war vessels; the third, by armed vessels of the various colonies, or detachments of the army.

At last a definite offensive naval policy had been established. Continental, colonial, or privately owned, the war vessels of North America were unleashed upon all British commerce wherever found upon the high seas – unrestricted warfare, and the final step in 'setting up for a Naval Power.' John Adams exulted:

Have you seen the Privateering Resolves? Are not these Independence enough for my beloved Constituents?[30]

[28] *Warren-Adams Letters*, I, 213.
[29] Library of Congress, *Franklin Papers*, fol. 291.
[30] *Warren-Adams Letters*, I, 227.

Not quite. One further measure was required to complete the establishment of the first American naval policy. It came, on 9 September, 1776, more than two months after the Declaration of Independence; a simple resolution reading:

> Resolved, That in all continental commissions, and other instruments, where heretofore the words 'United Colonies' have been used, the stile be altered, for the future, to the 'United States.'

The naval policy of the continent had become the naval policy of the nation.

Inspection Comments on American Ships and Barks

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JUSTLY proud of more than a century of leadership in New York marine underwriting circles, the Atlantic Mutual Insurance Company has carefully preserved an extensive collection of its old records. Important among these are twenty-one quarto volumes containing the reports of marine inspectors upon thousands of vessels. Their comments indicated to the company officials whether or not a vessel might be a good risk for insurance on hull, freight earnings or cargo.

The confidential informality of the brief entries reveals details of structure and durability which frequently cannot be found elsewhere. The comments upon new vessels often throw light upon unusual features in construction. More important, they are almost the only comprehensive source of information about the frequency and nature of the repairs which each vessel underwent in the course of her career. They show how ships of the same type, and even from the same yard, could vary in soundness and longevity, for potential durability, like potential speed, was something of a gamble. In this respect, they resemble the *Abstracts of Progress* volumes preserved (at least until recently) in the Admiralty Library for ships of the Royal Navy. After reading these reports, one can understand why the junior partner of the East River shipyard of Smith & Dimon could boast of the profits in his specialty of repair work. 'Smith builds the ships,' said Dimon, 'but I make the money.'

Ships and barks, brigs, schooners, steam vessels and foreign vessels each have separate volumes. The first three categories are further subdivided into a New York series, containing reports by the company's own local inspectors, and an 'Eastern and Southern' series, with reports from correspondents at Boston, Philadelphia and Baltimore. The bulk of the reports were made in the decade before the Civil War, although there is one volume, with comments too brief to be useful, running back to 1828, while occasional entries were carried on well into the 'sixties.

As a prelude to the comments, each entry gives certain basic data, some

of which is not to be found in the customs registers but most of which appeared later in the printed reports of the American Lloyds. Generally one finds the hailing port, the names of managing owner and master, the tonnage, the number of decks, the draft (an important consideration in view of the ports to be visited), place and date of building, occasionally with the name of the builder, the kinds of wood used, the fastenings (copper or iron), the sheathing (copper or yellow metal) and the lines (sharp, clipper, half-clipper, common, or full). The current insurance rating is also given, ranging from 'A1' down to '3D' or 'no rate,' though the dates of the shifts in rating are not always evident.

The real value of the volumes lies in the inspectors' comments. Frequently they passed judgment upon the vessel as she came from the ways, noting special features of construction and often passing general comment upon the quality of the work. Unfortunately, the New York ship volume covering the years 1847-1852 is missing, so that many of the accounts in this study start with the repair reports in 1853. Apparently, the inspector made a report whenever a vessel underwent repairs at local yards and entered hearsay reports of repairs elsewhere. The simplest and most frequent of the entries was 'caulked and coppered'; but occasionally one finds detailed accounts of rottenness underlined or written in red ink, so that they would not fail to catch the eye when application was made for insurance.

The Atlantic Mutual evidently had some very tough old captains for its local inspectors in those years. The men who held that position, with their terms of service, were Samuel J. Waring, 1842-1868; William A. Ellis, 1849-1857; Albert A. Farnham, 1854-1870; and Jeremiah Darling, 1857-1894. They couldn't spell—not until one turned to the Boston reports, for instance, was it clear that 'weg kelson' meant that the kelson had been wedged. But they apparently prowled around the repair yards with an ever-suspicious eye. If economical ships husbands did not have all doubtful planking or timbers examined or shifted, the inspector used red ink on his return to the office. Frequently the suspicions were justified by subsequent events. One looked over the bark *Lucerne*, for example, and underlined his comment, *'Guess the worms are bad.'* A year or so later, she went missing between Montevideo and New Orleans. It is safe to assume that the Atlantic Mutual was not involved in the loss. Other similar instances occur in the following items. That vigilance was doubtless one explanation of the company's phenomenally high dividend record. The more literate reports from the Boston correspondent, Samuel Pearce, were generally more lenient.

A few dozen individual reports, out of the many thousands recorded, are included here to give an idea of the nature of the comments. The present instalment includes clippers, packets, ordinary ships, and barks. The clippers and packets are included because of the interest in the particular vessels; the ordinary ships and barks are for the most part 'horrible examples' of bad condition and are not to be regarded as typical. A later article may present a batch of brigs and schooners, where the comments throw even more light upon the peculiarities of structure.

The entries indicate the danger of sweeping generalities about the durability and strength of various types of vessels. They show that not all the clippers became prematurely decrepit from hard driving and that some of the supposedly tough packets began to need extensive repairs even sooner than some of the 'greyhounds of the sea.' The *Flying Cloud*, to be sure, lost her A1 rating just after her second 89-day run to San Francisco and soon afterwards dropped to A2. Webb's *Sword Fish*, on the other hand, required nothing but caulking and coppering during her first ten years, despite her impressive speed record. One cannot say, however, that McKay built less soundly than Webb — the former's *Flying Fish* retained top rating until the end of her career, whereas the latter's *Challenge* needed 'large repairs' within four years. By and large, the transatlantic packets were tougher ships than the clippers. The author has elsewhere demonstrated (*Square Riggers on Schedule*, pp. 98-104, 276-286, 300-301) that most of them lasted well beyond the normal twenty-year active life of a vessel. The inspection records, however, show some exceptions. One particularly surprising case was the Black Baller *Manhattan*, which was 'found rotten' nine years after Webb had launched her, even though she was one of the few vessels in that later period to be built of the expensive and supposedly durable live oak and cedar. His *London*, built for the Black X Line the year before, had an identical record. Neither went through her first decade as well as his fast clipper *Sword Fish*. The costly products of the East River yards were supposedly better than those built in Maine and other places east of Boston. Yet the *American Congress*, built for the Swallowtail Line at Newcastle, Maine, stood up better than those two packets of Webb's.

One cannot, however, jump to the conclusion that durability was a universal characteristic of Maine shipbuilding. Most of the examples of ordinary ships and barks in the last two sections of this article were handpicked to illustrate extreme decay, and most of those came from Maine. Probably much more care was expended in selecting timber for the *American Congress* and, moreover, she was properly coppered at the out-

set. In the five years before 1848, Maine had built some 178,000 tons of shipping; during the next five years, the total jumped to 449,000. With the heavy demands of that boom period, it is probable that builders did not always wait to season their timber adequately, and green oak was one of the chief causes of premature rot. In addition, the owners of some of the vessels in the rank and file of the merchant marine apparently tried to find cheaper substitutes for expensive copper sheathing. Several of the most rotten vessels had been 'zincd' instead of coppered and the sea worms seem to have made the most of their opportunity. Two vessels built on the Ohio River found their way to New York; one wore fairly well but the other did not. The remarks on the bark *Kirkland* illustrate the detailed loquacity of the Baltimore inspector in describing new vessels. To offset the prevailing atmosphere of rottenness in the last two sections, the old whaler *Albion* has been included to show that some vessels were still stout when approaching the half century mark.

(In the following entries, all vessels, unless otherwise indicated, were two-decked, coppered and copper fastened, and of 'common' lines. To save space, the frequent entry 'caulked & coppered' has been abbreviated to 'c & c.')

CLIPPERS

Andrew Jackson (originally *Belle Hoxie*) (Mystic, Ct., Williams, '55; 1679 tons; 20 ft. draft; oak & chestnut; iron and copper fastened; 'medium') '55, new, Oak & chestnut frame, yellow plank on the bottom. Oak wales. Double riders & sister kelson. 3 pointers forward in hold. 12 in. yellow pine in the bilges & a stringer under the heel of lower knees & full sets of white oak hanging knees. Appears to be well fastened & fitted. 1-2 poop & house cabin. June '55 (name changed) caulked bottom & yellow metal. Sept. '56 On shore on rocks in East River. Keel damaged. Rep'd with piece new keel & false keel. Oct. '56 caulked & yellow metal. Nov. '58 Caulked all over & coppered & put in good order. Aug. '60 c & c. Apr. '66 coppered. British flag. Wrecked in '68. Rating A1 to '55, then A1 1-2, later A2.

Celestial (N. Y., Webb '50; 860 tons; 17 ft. draft; 'oak &c' 'sharp') Dec. '52 coppered; Sept. '55 Arrived leaking, stripped, c & c, new mainmast fitted & put in order. Sept. '56 Caulked topsides. July '58 c & c. Sold to Blanco for a Spanish house to trade between Cadiz and Havana. Rating A1 to '58, then A1 1-2.

Challenge (N. Y., Webb, '50; 2006 tons; 3 decks; 21 1-2 ft. draft; 'oak &c' 'sharp') Feb. '54 coppered. Double drag braced on the frame. Had large repairs at London and many iron knees put in. June '54 New foremast. April '56 Coppered at London. March '58 Some wormy plank shifted about the waterline & 5 or 6 'streaks' new copper put on above garbord stripes. Caulked & fixed. (date?) Old copper pretty good. Called *Golden City*. Also said to have changed to *Result* of London. Lost by fire at Melbourne Oct. 11, '66. Rating A1 to '56, A1 1-2 '56-'58, then A2.

Dreadnought, see Packets.

Contest (N. Y., Westervelt, '52; 1098 tons; 18 ft. draft; 'oak & c' 'sharp') May '54 c & c; Sept. '56 c & c; Apr. '58 c & c and put in good order. Aug. '60 coppered at Hong Kong. March '61 Put into St. Thomas leaky. May '61 Discharged & came to N. Y. Taken on dock & found very bad leak near the foremast in the seam next to garbord. C & c her bottom, wedged ceiling (Burned by *Alabama*, '63) Rating still A1 in '54, later A1 1-2.

Flying Childers (Boston, Hall, '52; 1125 tons; 20 ft. draft; 'sharp') (overlapping reports in N. Y. and 'Eastern' volumes) new, Appears a well built ship. Full sets of oak & hackmatack knees. Rider kelson, 2 pr. pointers forward & aft. 1-2 poop & a small house on deck. Oct. '53 c & c at Whampoa. Dec. '55 Is now a good wearing ship & now in good order. Metalled to 17 or 18 ft. Now all caulked. 2 new hawsers. Dec. '58 caulked & yellow metal at Boston. June '60 c & c. Rebolted keel & wedged ceiling. Later reg. Liverpool, called *Golden South*. Rating A1 to '58, then A1 1-2.

Flying Cloud (Boston, McKay, '51; 1782 tons; 20 ft. draft; 'white oak &c' 'sharp *very*') new (Boston) Hard pine covering. Full sets hackmatack & white oak hanging knees. Well built & fitted. Dec. '54 c & c; damaged cargo as per Capt. H. Mar. '57 caulked & yellow metal. Mar. '58 Spars shortened. Better now than formerly, looks well inside. Keel repaired, caulked topsides. Nov. 12 '59 This day opened on the inside, found sound. Rating A1 to Dec. '54, A1 1-2 '54-'57, A2 '57-'58, A1 1-2, '58-'59, then A2.

Flying Fish (Boston, McKay, '51; 1505 tons; 20 ft. draft; white oak; 'sharp') new (Boston) Coppered to 19 ft. Full set of white oak and hackmatack hanging knees. Clipper built & looks well. Sept. '53 Bottom stripped, all recaulked. New shoe and new coppered to 20 ft. Wears well. Sept. '55 On dock, all recaulked outside & metalled to 19 & 20 ft. 20 to 26 oz. Sept. '56 On dock. Sept. '57 Metal examined, 30 sheets to repair & now in prime order. Recaulked & metalled & new mainmast. (Nov. '58 wrecked and sold in China) Rating, still A1 in '57.

Jacob Bell (N. Y., Bell, '52; 1381 tons; 20 ft. draft; 'live oak &c' 'sharp') Sept. '54 c & c; March '56 On dock, fixed & patched copper. Looks very well. Dec. '57 Opened & found rotten. Dec. '58 Repaired & patched copper. Aug. '59 coppered at Hong Kong. Sept. '61 c & c. Captured & burned by *Florida*, Feb. 13 '63. Rating A1 to '56, later A1 1-2, then B.

Samuel Russell (N. Y., Brown & Bell, '47; 957 tons; 18 ft. draft; 'oak &c' 'sharp') Dec. '54 c &c. Jan. '56 Coppered patched & refitted. Big head taken off & a small one put on, a good job. Mar. '57 On dock, cut off 10 in. of keel, shortened masts, some new spars. Refit rigging, c & c. May '59 Good ship yet. On dock, c & c. June '60 Opened & found her frame sound. Repaired with new topsides & deck, some new spars & rigging & ship put in good order. Aug. '64 Coppered at China. Aug. '66 caulked & yellow metal. Feb. '68 Patched copper. Rating A1 to '57, A1 1-2 '57-'68.

Stag Hound (Boston, McKay, '50; 1534 tons; 20 ft. draft; 'white oak &c' 'sharp') new (Boston) Full kneed, well built & fitted, poop cabin. Bottom planks 4 1-2 inches. Jan. '53 c & c; Nov. '55 Bottom recaulked & metalled at London; Nov. '56 Upper deck made flush aft. New 1-2 poop house cabin; ceiling all wedged. Lower deck hanging knees & breast hooks all rebolted & generally refastened. New mainmast with some new rigging. Decks recaulked. Her metal opened & bores sound and now in fine order. Jan. '58 Recaulked deck, put in fine order & metalled. Shows some strain,

has iron hooks. Feb. '61 Opened on the inside in many places & found sound. July '61 Caulked & yellow metal at London. Rating A1 to '58, A1 1-2 '58-'61, then A2.

Sword Fish (N. Y., Webb, '51; 1034 tons; 19 ft. draft; 'oak &c' 'sharp') Jan. '53 c & c. April '56 On dock, examined & patched yellow metal, caulked bends & deck; May '57 On dock, ship caulked & yellow metal. April '59 c & c. April '61 c & c. Rating A1 to '55 or '56, then A1 1-2 to '60, A2.

PACKETS

A. Z. (Zerega Line, immigrant packets) (Boston, '47; c 700 tons; 'oak &c') Nov. '52 Coppered. June '54 New foremast. Oct. '57 c & c, *Shows wear* (red ink). Foundered, N. Y. to Glasgow, Oct. '58. Rating A1 1-2 by '52, later A2.

American Congress (Swallowtail Line) (Newcastle, Me., '49; 863 tons; 17 ft. draft; live oak & Hackmatack; 'full') Nov. '53 coppered; Sept. '55 Put on Poillon's Rig. Oct. '56 caulked & yellow metal. Looks very well. Dec. '59 c & c. Nov. '62 c & c. July '63 New wire rigging aloft & hemp rigging below. Sept. '63 New mainmast. . . . March '66 Refitted, caulked all over, coppered. March '68 On dock. *Opened Sound*, patched yellow metal. Rating A1 1-2 by '53, later A2.

Amazon (London Black X Line, largest packet) (N. Y. Westervelt, '54; 1771 tons; 3 decks; 22 ft. draft; 'oak &c') new, Jacob A. Westervelt builder. 3 full decks. Built of best materials, well fastened & secured with riders. Sister & bilge kelsons. Hooks & pointers cross braced between the knees & between decks. Oct. '55 Some repairs at London, caulked & yellow metal. Aug. '59 On Dock. stripped, caulked & yellow metal. Repaired shoe & cutwater. Apr. '62 Repaired, caulked & yellow metal at London. Totally destroyed by fire at sea Nov. 3 '63. Rating A1 to '59 or '62, then A1 1-2.

Dreadnought (Red Cross Line, later alone on Liverpool shuttle) (Newburyport, Mass., Currier & Townsend, '53; 1413 tons; 3 decks; 21 ft. draft 'is deep enough'; oak; 'half clipper') new, Sharp ends and flat in middle. Full wood hanging knees. Substantial well-built ship. Jan. '54 c & c. Oct. 54 c & c. Jan. '56 Copper patched. June '57 c & c Mar. '60 Caulked & yellow metal at Liverpool. May '63 New braces to rudder. c & c. April '65 caulked garbord & patched copper. Wrecked July 4 '69. Rating A1 to '63?; then A1 1-2.

Germania (Havre Line, Whitlock) (Portsmouth, N. H., '50; 996 tons; 19 ft. draft; 'oak &c') Dec. '53 coppered; Apr. '54 On dock. caulked & yellow metal; May '60 Caulked garbord & patch copper; Oct. '61 c & c. Oct. '65 caulked top. Jan. '67 Caulked & yellow metal, & a new gang of lower rigging all round. Dec. '69 Rep'd & a new keel, refastened butts, caulked all over & yellow metal at Liverpool. Rating A1 to '56, A1 1-2 '56-'59, then A2.

Great Western (Black Ball Line) (N. Y., Webb, '51; 1443 tons; 3 decks; 21 ft. draft; live oak & cedar) Sept. '53 Caulked & yellow metal; March '56 Had a rough passage & leaked a little. c & c. & refitted with part new sails &c. April '57 Thoroughly & well rep'd & refitted, having been in collision. Aug. '60 c & c. Feb. '64 Caulked & yellow metal. June '66 New bends, part new topsides, new cants aft, clamps & several new knees, caulked all over & yellow metal at Liverpool. Aug. '67 Ashore on Diamond Reef, off, & repaired part new keel, caulked & yellow metal. Rating A1 to '56, A1 1-2 '56-'67, then A2.

London (Swallowtail Line) (N. Y., Webb, '48; 1145 tons, 3 decks, 'oak &c') Jan '53 c & c. . . (illegible) Sept. '56 Caulked & yellow metal. June '57 *Found rotten* & now being rep'd fore & aft — *good job*, refastened & copper patched. Apr. '59 Said to have been coppered. June '59 Capsized at dock & sunk, June 25; righted & taken to dock & patched copper. Sept. '61, Caulked & yellow metal at London. July '62 On dock to stop a leak; c & c. Rating A1 to '56 A1 1-2 '56-'62, then A2.

Manhattan (Black Ball Line) (N. Y., Webb, '49; 1299 tons, 3 decks; 20 ft. draft, live oak & cedar) May '53 c & c, Jan. '57 c & c, Aug. '58 Opened on the inside aft & found rotten; repaired with 15 new timbers on one side, 16 on the other & ceiling. Then taken on the dock, stripped in the wake of these timbers. Refastened, caulked & coppered only at that place. I think she should have been opened 'forard.' Mar. '60 c & c, braced between 2 deck, some new rigging. Oct. '61 On dock & stopped a leak. A1 to '58, then A1 1-2.

Underwriter (Red Star Line) (N. Y., Westervelt & Mackey, '50; 1168 tons, 3 decks; 20 ft. draft; 'oak &c') May '54 c & c; March '57 Appears to wear very well. Has a light upper deck. Yellow metal patched. April '59 Rudder & forefoot repaired, c & c, & put in good repair. June '63 Caulked topsides & bottom & coppered. Feb. '66 Large repairs & coppered at Liverpool. Rating A1 to '56, A1 1-2 '56-'66, then A2.

OTHER SHIPS

Carioca (Kensington, Pa. '50; 460 tons, 16 ft. draft, oak & locust) Aug. '55 Full sets oak knees. Good ship & well fitted. Sept. '59 Disabled & at Phila., some new spars, repaired, refitted, caulked & yellow metal. Feb. '61 Small opening on inside & found rotten, ceiling poor. Rating A1 1-2 in '51, A2 in '55.

Finland (Portsmouth, N. H., '44; 549 tons, 18 ft. draft, copper fastened, oak & yellow pine, 'full') '45 c & c to bm., June '48 c & c. Oct. '49 Iron hanging knees above & wood hanging knees below, coppered, well found. Oct. '51. *No rate,* refused to open for exam., Baltimore report no. 1225. Rating A1 to '48, A2 '48-'50, then 'no rating.'

Florida (Newbury, Mass. '44; 698 tons, 18 ft. draft, 'oak &c' 'full') May '52 c & c at London. July '58 c &c, some new spars & put in *good order*. Feb. '60 *Badly rotten. See Capt. P's letter on file.* (red ink) At Boston Feb. '60 bound to New Orleans, said to be badly rotten, as pr letter with Mr. Raven. Sold '61 or '62 & called *England's Queen.*

Marathon (East Haddam, Ct. '49; 890 tons; 3 decks; 18 1-2 ft. draft; Chestnut & oak) Dec. '53 c & c; July '56 c & c; Dec. '60 Opened on the inside & found rotten aft. Put in some new timbers, new ceiling, one pair of pointers aft, treenailed the new work, c & c. *They did not remove all the rotten timbers but may answer for a few years.* '61 sold to Liverpool. Abandoned at sea Dec. 22 '63. Rating A2 in '53 and thereafter.

Minnesota (Cincinnati, O., '48; 799 tons; 17 ft. draft; 'oak &c') Feb. '54 c & c, likewise refitted. June '56 *Badly wormed,* much plank & some wales removed above copper at Boston. Now said to be in good order. Oct. '57 caulked topsides. July '58 Caulked & yellow metal at Havre. Sold in England, Jan. '64. Rating A1 1-2 in '54, later A2, then A2 1-2.

BARKS

Adelaide (Portland, '47; 335 tons; 15 1-2 ft. draft. mixed woods) Sept. '49 Well built & fitted. Hanging knees under every beam, both decks. Rating A1 (for 2 years to '49, then for 10 years to '57).

Almeida (Dresden, Me., '48; 297 tons, single deck; 12 ft. draft; mixed woods.) May '52 c & c. Sept. '54 Damaged cargo. Aug. '55 c & c, Some bottom timbers removed from forward. How are *the other* timbers? New foremast & refitted. Looks pretty well. Oct. '57 Caulked topsides. . . . Sold at Havana '57; was afterwards seized on Coast of Africa slaving & taken to Sierra Leone. Rating A2 in '52, later A2 1-2.

Albion (Haverhill, Mass., *1815*; 326 tons; 15 ft. draft. Oak & mixed woods, 'full') Oct. '63 Originally well built. Has been a long time in the whaling business & also many repairs. Had new top timbers from between lower deck up from new topsides. New ceiling above bilge. New deck frames & deck. New hooks & all caulked. June '64 On dock, yellow metal. Rating A2 in '63 (48 years old); A2 1-2 in '64.

Caroline Read (Bonnysville, R. I., '48; 660 tons; 17 ft. draft, 'oak &c') Sept. '53 coppered at Liverpool. Nov. '55 Put in at St. Louis (Mauritius) leaking. Hove out. Ship caulked all over & yellow metal. Is a weak ship & works badly in upper works. Aug. '57 Had new streaks of deck next to waterway, with other small repairs. Sept. '59 Some new timbers put in. c & c. July '60 See Certificate on file. Well looked at. Some holes found in frame. Guess she will do for the present. Dec. '74 (in pencil) Reported by Mr. H. H. Watson of San Francisco to be a poor vessel. Rating A2 in '52, A2 1-2 in '60, 3 in '74.

Clintonia (Baltimore, '46; 223 tons; single deck; 11 ft. draft; oak; yellow metal) Apr. '58 Appears well built of *this* class. The beams are only from the bows to abaft main hatch. Then begin the 1-2 poop beams. Heavy clamps & 1 pr. wood knees, 3 pr. iron knees in the long 1-2 poop. Has had several good repairs. Caulked & yellow metal. Rating A2 in '58 & thereafter.

Civilian (Waldoboro, Me. '51; 199 tons; single deck; 11 ft. draft; mixed woods; yellow metal) April '63 Formerly 1-2 brig, which see Book No. 2. No iron knees. 1-2 poop house. Caulked & yellow metal. Feb. '65 Opened & found rotten. Repaired with many new timbers, new ceiling. Refastened new work. Caulked & painted. Rating A2 in '62, then A2 1-2.

Jedo (Damariscotta, Me., '48; 242 tons; single deck; 12 ft. draft; Mixed woods; Iron & copper fastened) Oct. '51 Caulked & 'zincd.' May '56 Caulked & bottom painted. Oct. '57 On dock at Hunter's Point, *much wormy*. Cut out some small pieces of plank & put in others. Put worm spiles into many of the holes. Caulked & painted. Aug. '59 On dock. Cut out several of the wormy places & put in granny pieces. Caulked bottom & painted. Boston for Matanzas, missing, Feb. '61. Rating A2 in '51, 3D in '59.

Kirkland (Baltimore '47; 360 tons, 13 ft. draft.) new (Baltimore) 15 fathom chain cables, 1 1-4 in. iron. Well built of oak, except top stanchions of waist, upper beams, ceiling between decks, & the clamps all of yellow pine. Lower & upper deck frames are horizontally kneed & clampd. 3 thick bilge strakes. 3 breast hooks below & 1 above knightheads. Stern timbers some cant. Timbers & all top timbers abreast of the poop are cedar. Top stanchions are locust. Patent windlass, 2 bower anchors

weight 2990 lbs. (No further remarks except notes on rating) Rating A1 to '53, then A2.

Lucerne (Bristol, Me., '47; 199 tons; single deck; 11 ft. draft; mixed woods; iron & copper fastened & coppered). March '55 Repaired, parts of wormy plank taken out, timbers as far as jerry hooks well caulked. Bottom *sheathed* & coppered. June '57 Keel badly eaten by *worms*. Most of it shifted, patched & fixed. *Guess the worms are bad.* Montevideo from New Orleans missing, Oct. '58 or '59. Rating A2 in '55, A2 1-2 in '57.

Linden (Thomaston, Me., '52; 440 tons; single deck; 14 ft. draft; mixed woods; iron & copper fastened & coppered) Oct. '53 c & c; March '58 patched copper & caulked topsides; July '60 Some of her plank is rotten under the quarters & probably some of the timbers. April '62 Removed some rotten plank & replaced them with good plank. Treenailed bends, caulked topsides & opened her in several places in the ceiling & found the timbers more or less rotten. Nov. '64 (red ink) *Came in leaky, taken on Dock & removed some four pieces of bottom plank. Caulked & painted & many very rotten plank not removed.* Rating A2 in '53, A2 1-2 in '62, 3D in '64.

Muskingum (Marietta, O., '45; 258 tons, single deck; 12 ft. draft; 'oak &c,' iron & copper fastened & coppered) Mar. '53 c & c; March '56 Refitted & put in order. Mar. '55 *Fresh water vessel.* Looks very well and *this voyage* delivers her cargo in good order. '57 Was caulked & 'zincd.' Sept. '60 This day opened on one side & found sound & repaired. New pointers, some spars, rigging & put in good order. March '61(?) On dock, treenailed bottom & topsides, poop, 2 pr. pointers, caulked all over & coppered & poop in good order. July '62 Condemned & sold at Rio de Janeiro & name changed to *Barbados.* May '63 Name changed *to J. C. Rahmn.* Rating A2 1-2 in '53 and thereafter.

William Henry (Warren, Me., '49; 299 tons; single deck; 13 ft. draft; mixed woods; copper fastened) May '53 'zincd.' Aug. '55 New foremast. Oct. '58 Single bottom painted. Appears slightly wormed at light waterline. Rep'd with new bottom from wales down, all wormy planks taken out. Caulked & painted sternpost, stem & keel. Some wormy. Most of the transoms are *rotten.* Some of the cant timbers *slightly* rotten. Dec. '56 On dock, caulked butts & garbord & painted. July '60 On dock, caulk, felt & yellow metal. Oct. '61 Condemned & sold at Cape Verdes. Rating A2 in '53, later A3.

Auxiliary Steamships and R. B. Forbes

BY CEDRIC RIDGELY-NEVITT

WHEN American shipbuilders were first faced with the problem of commercial steamship design, they adopted two general solutions. The simpler was to build a sailing ship and have the nearest iron works supply and install machinery. This conservative approach would be strongly supported by the sailing ship captain who would command the vessel and the sailing ship owner who wanted to build her as cheaply as possible. The second solution was developed by the builder who conceived the steamship as a new entitity. The imaginative designer knew that steam had been proven reliable by a decade of successful operation on the Hudson River. In addition, he realized that the speed of his vessel would be limited largely by the amount of coal she could stow in her bunkers. As a result of these considerations, a fine-lined vessel with a small rig was produced; it was easily driven, yet it had a large amount of space in the hull for machinery, fuel, and a limited amount of cargo. This was a true steamship.

As early as 1820, both types had appeared. The *Savannah,* of transoceanic fame, was a sailing ship with an engine, while the *Robert Fulton,* first of our steam coasters, was a steamship with sails. The latter vessel was built by Henry Eckford, the most progressive builder of his time. It is to the credit of the American shipbuilders that they followed Eckford's lead; by 1850 the American steamship was a definite type. The details, naturally enough, were adopted from their sailing ship predecessor, but the general design was new.

Stemming from the first type mentioned, the conception of a combination sailing ship and steamship was an attractive one. When the wind was fair, the ship could sail; when it was not, she could steam. Nothing could be more logical and less profitable. The great advantage of the out-and-out steamship was its fixed-schedule operation, occasionally slower, but generally far faster than the competing sailing ship. Both shippers and travellers were willing to pay extra prices for certainty in

passage time. And, as a result, the steamers carried mail, first-class passengers, and express freight. The high revenues extracted paid for increased first cost and increased operating expenses.

Steam auxiliaries cost more to build than sailing ships and more to operate whether sailing or steaming. Since they counted on luck and the wind, they rarely carried enough coal for an entire passage; that made fixed schedules only a possibility. Moreover, the owner who chose such a half-way craft was inclined to install an engine of low power so that his ship's speed under steam was well below that of a fully powered steamship. The cumulative result was that the auxiliary steamship could command little or no advantage over a sailing ship. American owners soon discovered the fact; no costly ventures in large auxiliaries like the English *Adelaide* and *Golden Fleece* were ever made in this country.

Mr. Robert Bennet Forbes, merchant ship owner of Boston, was a firm believer in the auxiliary steamship. He was, of course, primarily interested in the Oriental trade.[1] Since no steamer extant could carry enough coal for so long a trip, the steam auxiliary was the only possible solution, aside from the sailing ship.

The development of the auxiliary steamship in this country was due largely to the enthusiastic Mr. Forbes. It was not in line with the more general growth of the American steamship, but is, nevertheless, worthy of note. Although not commercially successful, two of his vessels proved themselves of great military value during the Mexican War.

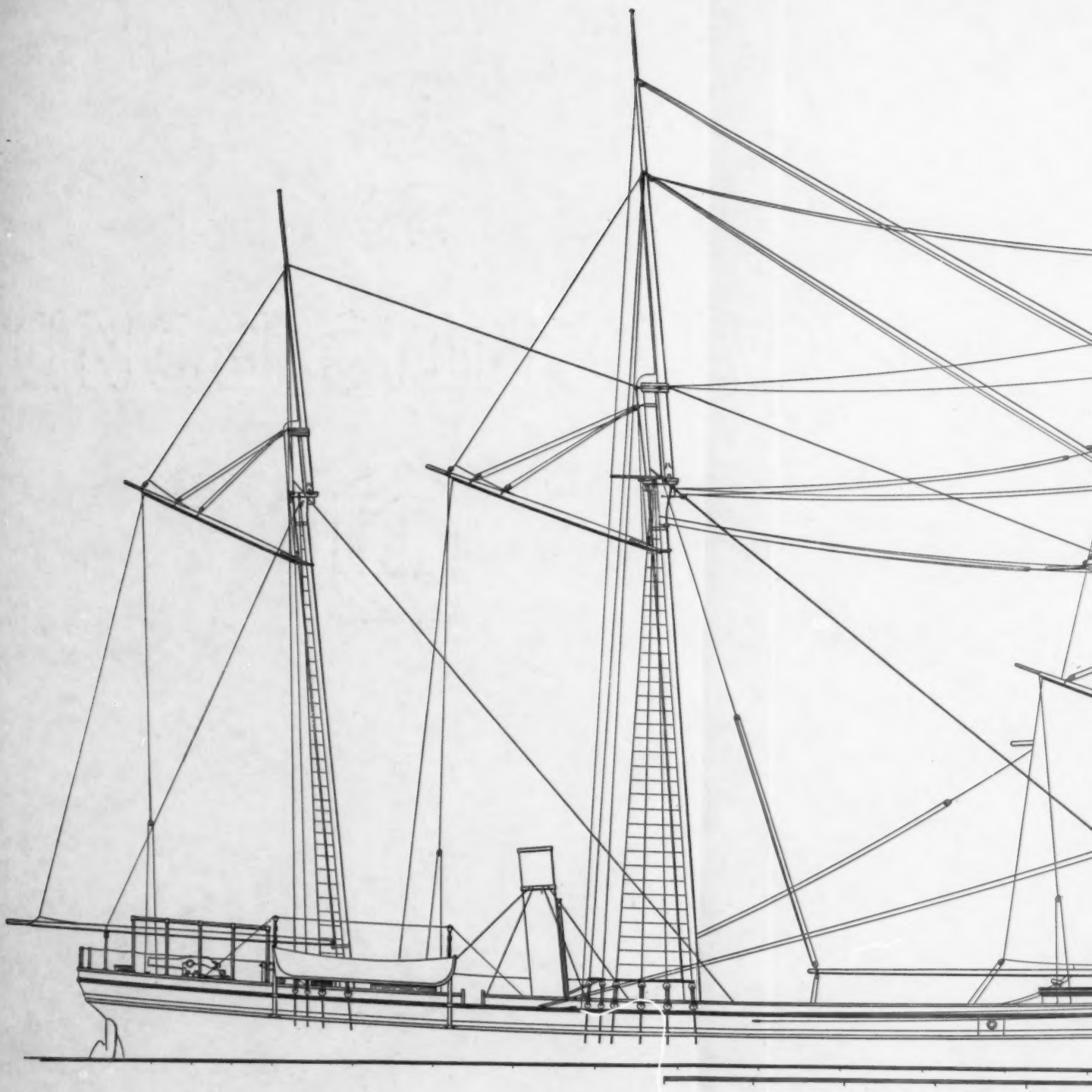
Naval vessels of the time were either sailing ships or auxiliaries, and auxiliary supply and transport ships fitted into the Navy's scheme of things with the greatest of ease. They could make about the same speed as their accompanying warships. In an emergency, their holds could be fitted with coal for long passages under steam. Here, the small engine and its low coal consumption proved most advantageous.

Because Forbes was proud of his ships and only too happy to tell the rest of the world about them, there is available detailed information about some of these vessels.

His first venture was the *Midas* of 1844, a steam topsail schooner built by Samuel Hall of East Boston. A model of her made by Forbes, himself,[2] was recently lent the Peabody Museum of Salem, and, although its date of construction has not been established, it appears to be a good

[1] Robert Bennet Forbes (1804-1889), who first arrived in China in 1818 as a boy on board the ship *Canton Packet*, was a partner in Russell and Company, Canton from 1839 to 1844 and from 1849 to 1854. For an account of career as a ship master, merchant and ship owner, see his *Personal Reminiscences* (3rd ed., Boston, 1892).

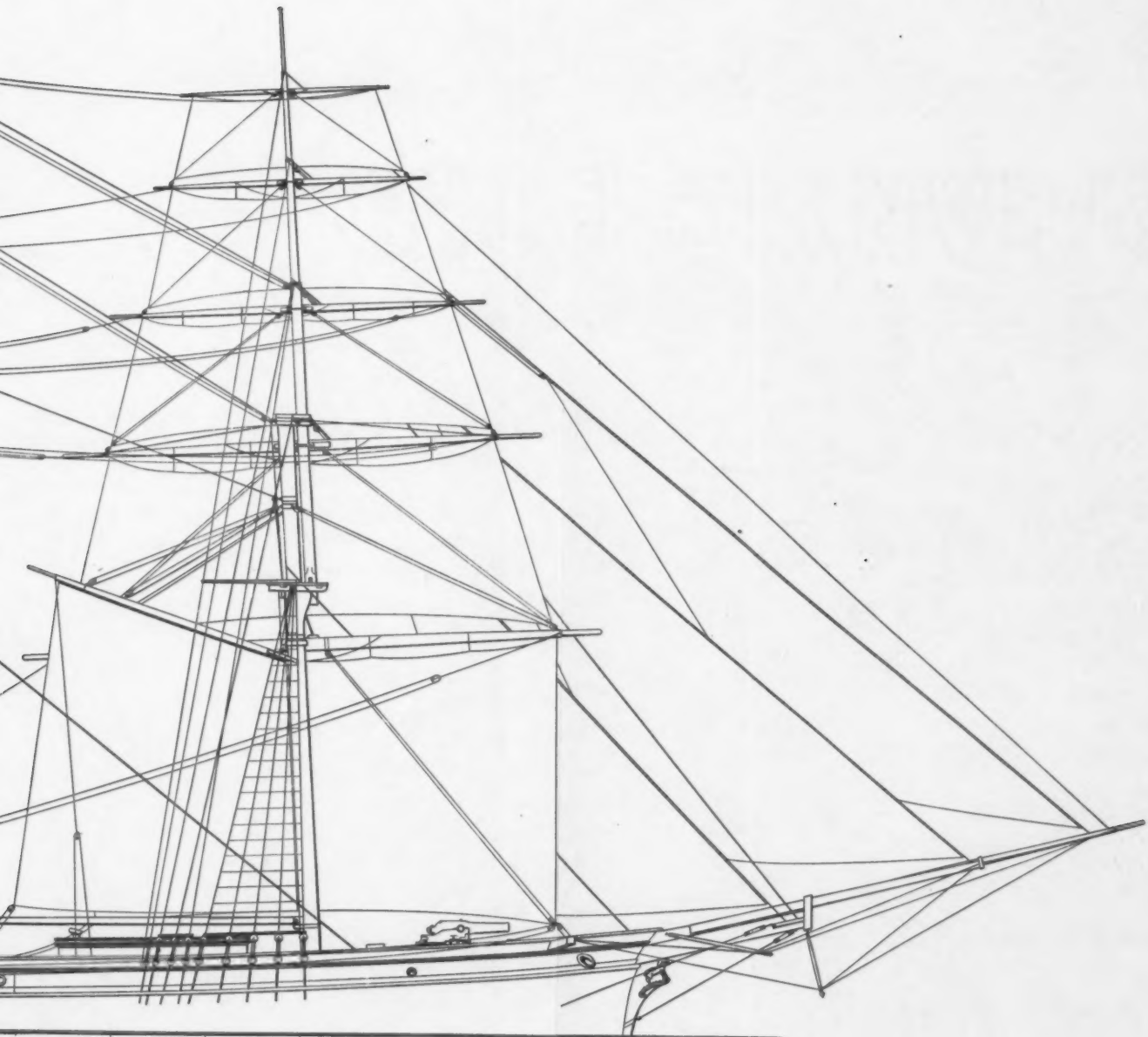
[2] *Personal Reminiscences*, p. 208 note.



—Antelope 1855—

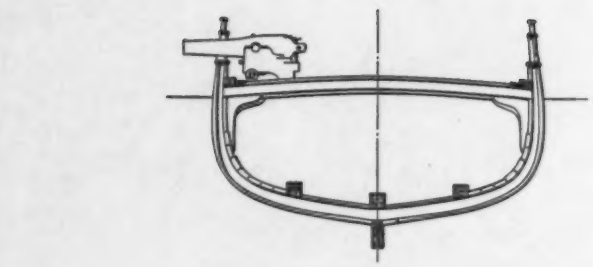
Drawn from Spar Dimensions

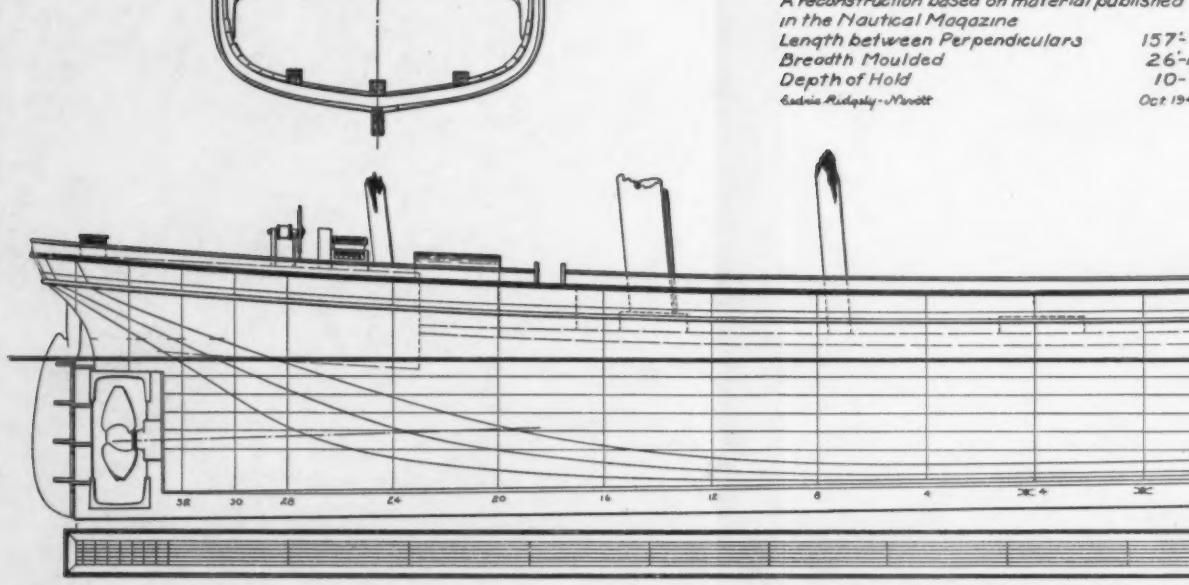
Cedric Ridgely-Nevitt Oct. 1940

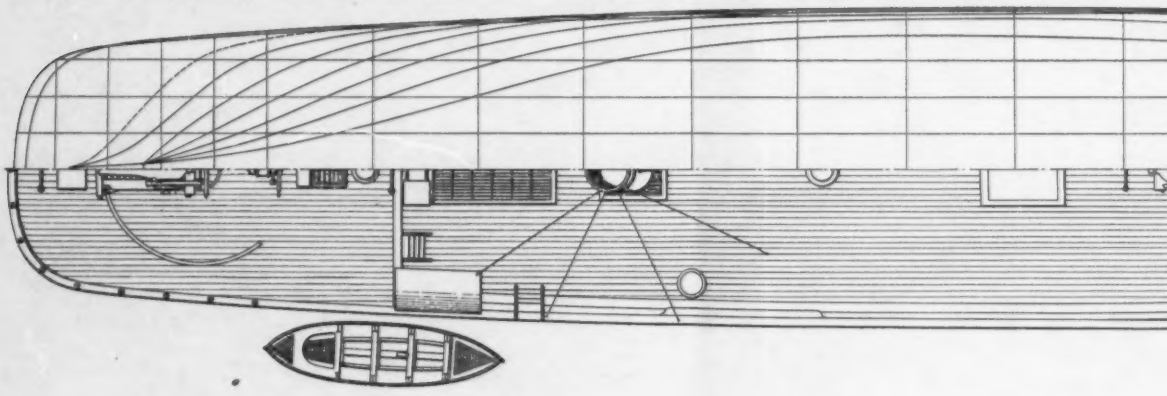


UNIV. OF MICH.

—Antelope 1855—







A reconstruction based on material published in the Nautical Magazine

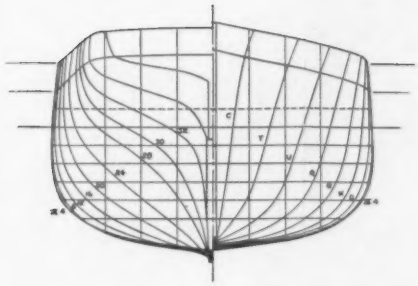
Length between Perpendiculars	157'-
Breadth Moulded	26'-
Depth of Hold	10'-

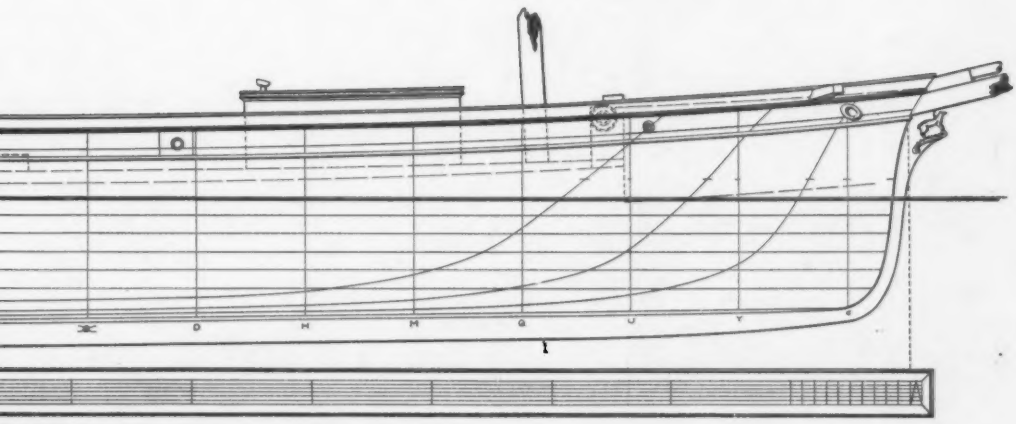
Cedric Ridgely-Nevitt *Oct 19*

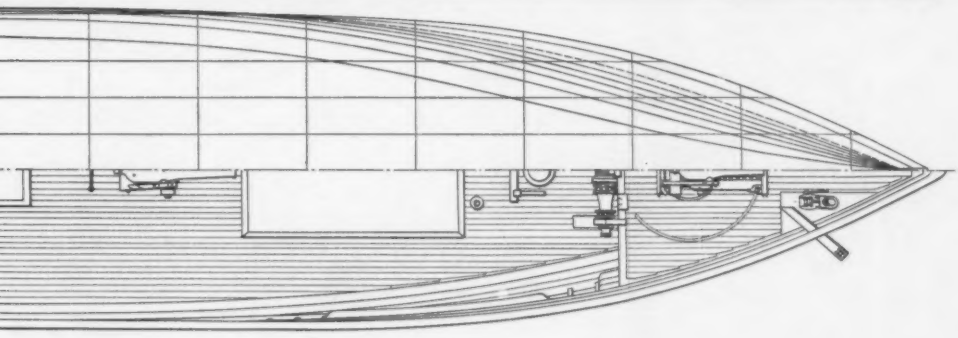
1855—

erial published

ars 157'-7"
26'-10"
10-6"
Oct 1940







reproduction of the vessel. She was not large, 148 tons and scarcely over 100 feet long. The hull had a plumb stem, a very deep keel, raised forecastle, and a quarter-deck from mainmast to taffrail except for a sunken well at the wheel. The *Midas* was the first vessel to carry Forbes' double topsail rig – possibly the model was built to illustrate this feature. The fore-topmast was stepped abaft the lower masthead, and the lower topsail-yard was hoisting; it was lowered almost to the top when the sail was furled. Another interesting feature, although it is not connected with Forbes' double topsail rig,[3] was the squaresail on the fore-yard with a short boom at the center of its foot and a sheet thence to a traveller on the forecastle head.

The *Midas* was one of the early vessels in this country engined by John Ericsson, who gave her twin screws with shafts carried on brackets bolted to the stern-post. The propellers were cumbersome affairs with a rim at about two-thirds the radius out from the hub, and, for some unspecified reason, they were supplied with four blades inside and five outside the rim.

On 4 November 1844 she sailed for China by way of the Cape of Good Hope and Singapore. For those who collect historical 'firsts,' she was the first American steam vessel to round that cape. On the way, she had trouble with her shaft bearings on the few occasions when her machinery was used. It is interesting to note that Ericsson was still running into difficulties because of unsatisfactory shaft bearings in the U.S.S. *Madawaska* some twenty-three years later. At any rate, the *Midas* arrived in Chinese waters, as Forbes puts it, 'with her brass bearings much injured, her boiler nearly ruined by neglect and bad engineering, and her reputation damned.' Perhaps the engine room temperature of 140 degrees did not tempt her engineer from the coolest spot he could find.

As long as her boiler lasted, the *Midas* was used as a tug between Hong Kong and Canton; after it finally gave out, her screws were removed and she sailed for New York via Cape Horn. Her engines were removed and she was sold for use in the Rio de Janeiro trade.

Under sail, she is said to have made 230 nautical miles in a day, a very good figure for so small a boat. Since Forbes does not mention her speed under power, we can assume that it was not high.

Close on the wake of the *Midas* came a slightly larger auxiliary, the *Edith,* 120 by 20 by 18 feet, a bark, which sailed for India in 1845. She, too, was built by Hall and engined by the Delamater Iron Works from

[3] Robert Bennet Forbes, *A new rig for ships and other vessels, combining economy, safety and convenience* (Boston, 1844).

designs of Ericsson. She had certain improvements; instead of two propellers to drag through the water while sailing, she had but one. Its shaft came through the hull at one side of the stern-post and the propeller was carried on a pivoted bracket that could be swung sideways and upward to lift the propeller out of the water. The propeller was placed abaft the rudder and the latter slotted to clear its shaft.

The engine room was insulated from the cabin floor by sawdust filling placed between the deck beams. The first time steam was raised, a leak made the sawdust soggy, the cabin damp, and put her captain in mortal fear of an explosion.

In India, British underwriters refused to insure her; in China, shippers feared that the heat from her furnaces would damage opium. As long as there were other craft available, the *Edith* lay without cargo. Eventually, she, too, had her propeller removed and sailed home again.

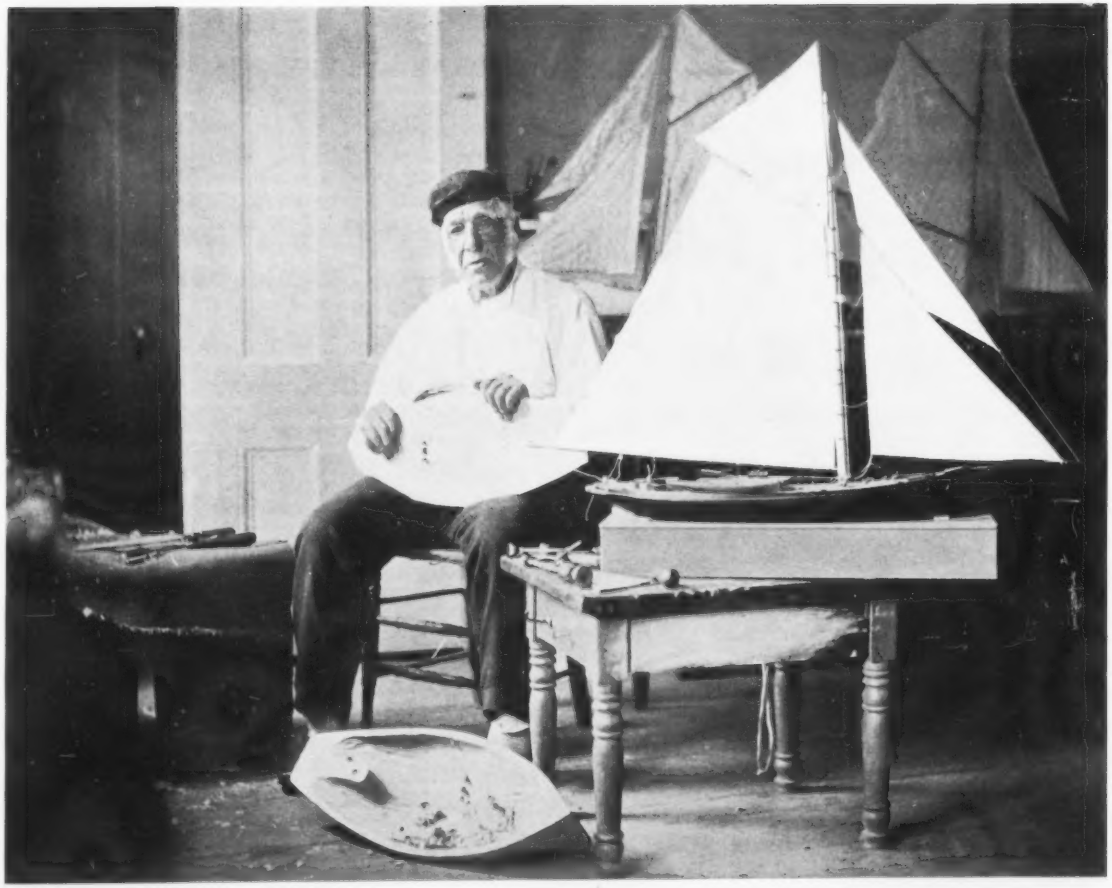
After her machinery was put in order, she was first chartered and later purchased by the War Department for use as a transport in the Mexican War. In 1849 she was sent to the Pacific Coast and stranded in a heavy fog off Santa Barbara.[4]

Largest of all the Forbes vessels was the steam packet *Massachusetts*. In appearance, she was a typical packet ship of the period save for a small funnel abaft the mainmast and her double topsail rig. Built in 1845, she was 160 feet long, 32 feet 2 inches in beam, 20 feet deep, and carried a large rig with a skysail on the main and a 66-foot main yard. Her engines had two cylinders at right angles to each other, 25-inch bore by 36-inch stroke. They developed some 170 horsepower, a very low figure. Consequently, her two boilers burned only 9 tons of anthracite coal per day; under the best of conditions she could make 8 knots. The propeller lifting gear was similar to the *Edith's*.

The *Massachusetts* was designed for the Atlantic trade, but she made only two round trips. Her first crossing of seventeen and one-half days, New York to Liverpool, eleven days under steam, proved that she could

[4] Dr. John Haskell Kemble of Pomona College has kindly supplied the following information about the *Edith's* career on the Pacific coast. *Edith*, Captain Corrillard, arrived San Francisco 21 March 1849, one hundred and thirty-four days from New York, and forty-one days from Valparaiso. She made the passage in one hundred and ten running days, of which she steamed fifteen. Cargo of quartermaster's stores, principally clothing. She called at Rio de Janeiro as well as at Valparaiso on the voyage. San Francisco *Alta California*, 22 March 1849, 2/4.

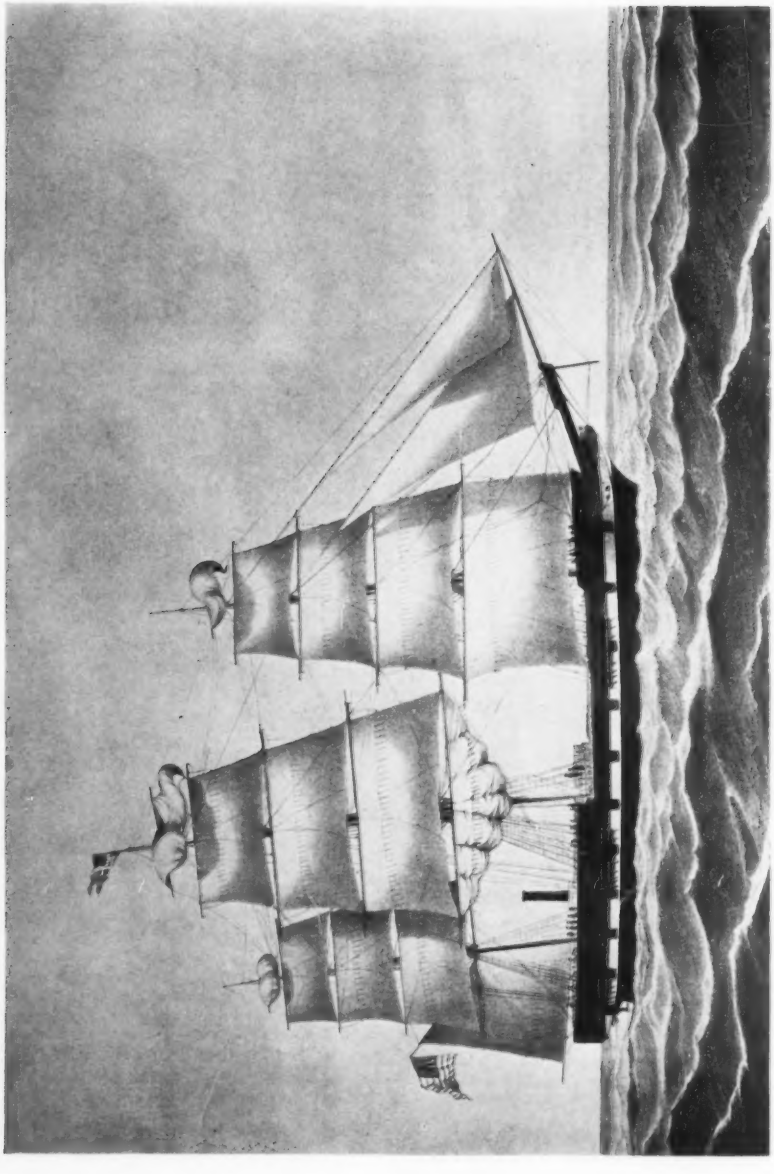
Edith ran aground 'eighteen leagues below San Luis Obispo,' which would be about Point Arguello (probably on one of the beaches above, rather than on the rocks at the point), seemingly late in August 1849. There had been a dense fog for two days, and it had been impossible to see land or get an observation. All her crew, and most of her furniture and provisions were saved. Her masts were cut away, and she was lightened as much as possible, but she bilged and filled with water. As late as mid-September, there was some slight hope of getting her off. San Francisco *Alta California*, 6 September 1849, 2/3; 13 September 1849, 2/2.



Robert Bennet Forbes in his workshop building the model boats
which he gave to the children of his friends
Photograph in Peabody Museum of Salem

PLATE I

PLATE 2



Steam packet ship *Massachusetts*

Lithograph by Fitz Hugh Lane in the Macpherson Collection

not hope to compete with the Cunard Line and its four steamships. These had been maintaining regular sailings to Boston for five years. Her return trip was even slower, twenty-eight days, practically all under sail because Welsh coal taken on at Liverpool would not burn in her grates. The second trip was just as disappointing, for rough weather made the use of steam impossible.

The *Massachusetts* then passed into the War Department's hands and was used to carry General Winfield Scott to Vera Cruz. After the war she was transferred to the Navy Department which found her a most useful vessel. In 1849 she was on the Pacific Coast,[5] where she was engaged in selecting sites for navy yards and lighthouses. She was subsequently rebuilt, and her name changed to *Farralones*. She remained on the Pacific Coast until 1870, when she was sold, converted to a sailing ship, and sailed for Europe with a wheat cargo. She was finally wrecked on the coast of Chile.

Mr. Forbes obtained enough, no doubt, from the War Department to write off his venture in steam auxiliaries with a very comfortable profit. After these three steamers, he built no more of the type until 1855, when the Japan and China packet *Antelope* was launched. She was a bark of 415 tons, built, as usual, by Hall. S. H. Pook designed her and Otis Tufts supplied her engines. In 1845, Mr. Forbes had to go to New York for his machinery; since then, however, Boston foundries and machine shops had appeared to meet the increasing demand for both marine and stationary engines.

The accompanying drawing is an attempt to reconstruct the *Antelope* from the available data: original lines, spar dimensions, scantlings, a lithograph, and a detailed deck description. For most vessels of the eighteen-fifties we have far less to go on. Unfortunately, only the original lines are extant and considerable changes were made. The depth was increased 1 foot, the length 10 feet. The drag of the keel increased, and the hull emerged from the process with deadrise instead of the planned flat floor. I have made these changes in the designed lines. I have retained the shape of all sections forward of the propeller post above the lowest waterline and added four extra frames amidships. The stern had to be fined down in the interests of fairness. The result is conjectural, of course, but the same procedure was probably followed in altering the mold loft lines.

A steamship's hull in 1855 would be flat-floored with a very square

[5] Dr. John Haskell Kemble informs me that the *Massachusetts* was on the Pacific Coast when the *Edith* was lost in the late summer of 1849.

midship section, its keel would be parallel to the load waterline, and it would have more depth in comparison with beam than a sailing ship. The *Antelope's* lines show none of these characteristics. She is a good example of sailing ship design applied to a steamship. Another interesting point is the deep 28-inch keel, a feature seen in some of the clipper ships. There are advanced elements, as well. Most ships of the period had hawse holes cut in the bow, but steamships were beginning to install hawse pipes, thereby keeping the forecastle both clean and dry. In the *Antelope*, one wonders why the cables were not led in the more usual fashion to clear the pivot gun mounted on the forecastle head.

She was well armed for so small a vessel, carrying a sixty-four-pound shell gun amidships and thirty-two-pounders on the forecastle and quarter-deck. All were of Dahlgren design. Small arms were kept in the cabin and a port let in the bulkhead gave command of the deck from that point if she were boarded.

Abaft the forecastle, which was furnished with twelve berths and a table 'tastefully painted and grained,' was a large deck-house containing other quarters and the all-important galley. Lashed to the main hatch was a small house used as a hospital. Aft, the corners of the main cabin were cut off making it octagonal. This was necessary to make room for the berths in the rooms forward and aft of it. On the quarterdeck, the wheel was well forward to clear the pivot gun, and the compass, an imported one suspended by india-rubber, was built into a skylight.

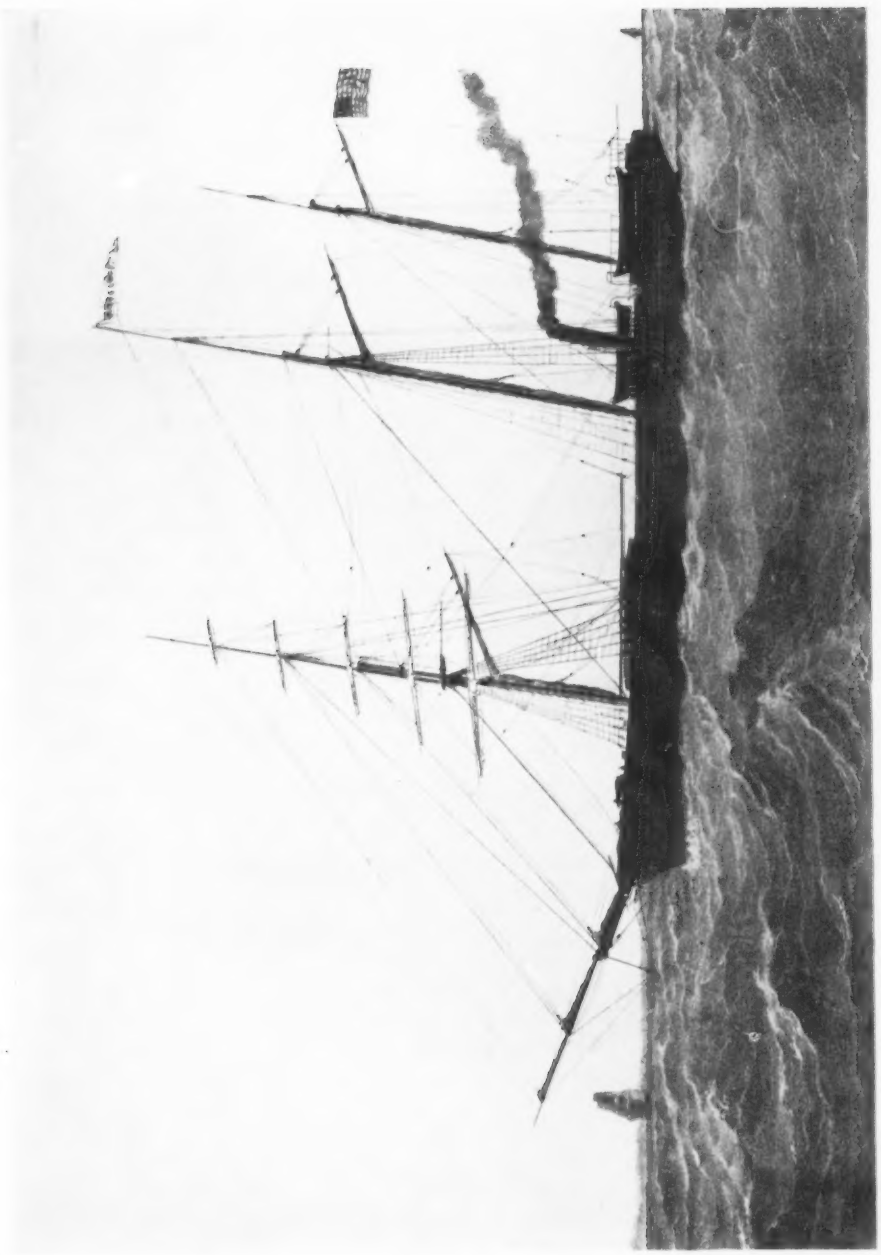
Her quarter boats were of sheet metal. The sides of one were corrugated, but the other, which was self-bailing, was smooth. A ship's boat of cedar is also mentioned, but the *Nautical Magazine's*[6] lithograph shows only two boats visible.

The *Antelope* was sheathed with yellow metal and painted black outside and buff inside. If she followed the usual practice, her bowsprit, yards, booms, doublings and tops would be black and the masts bright.

Aloft she carried Forbes' improved rig with the topmast stepped forward in the usual fashion. On the fore and main were lightning conductors let in the mast as far as the cross-trees; there they branched to follow a shroud down either side and connect with the sheathing as a ground. A cargo boom was mounted on the foremast, and a shifting mainstay could be rigged for setting a storm staysail.

The *Antelope* was driven by a two-cylinder, inverted engine of 30-inch bore by 26-inch stroke. Her two boilers could burn either hard or soft

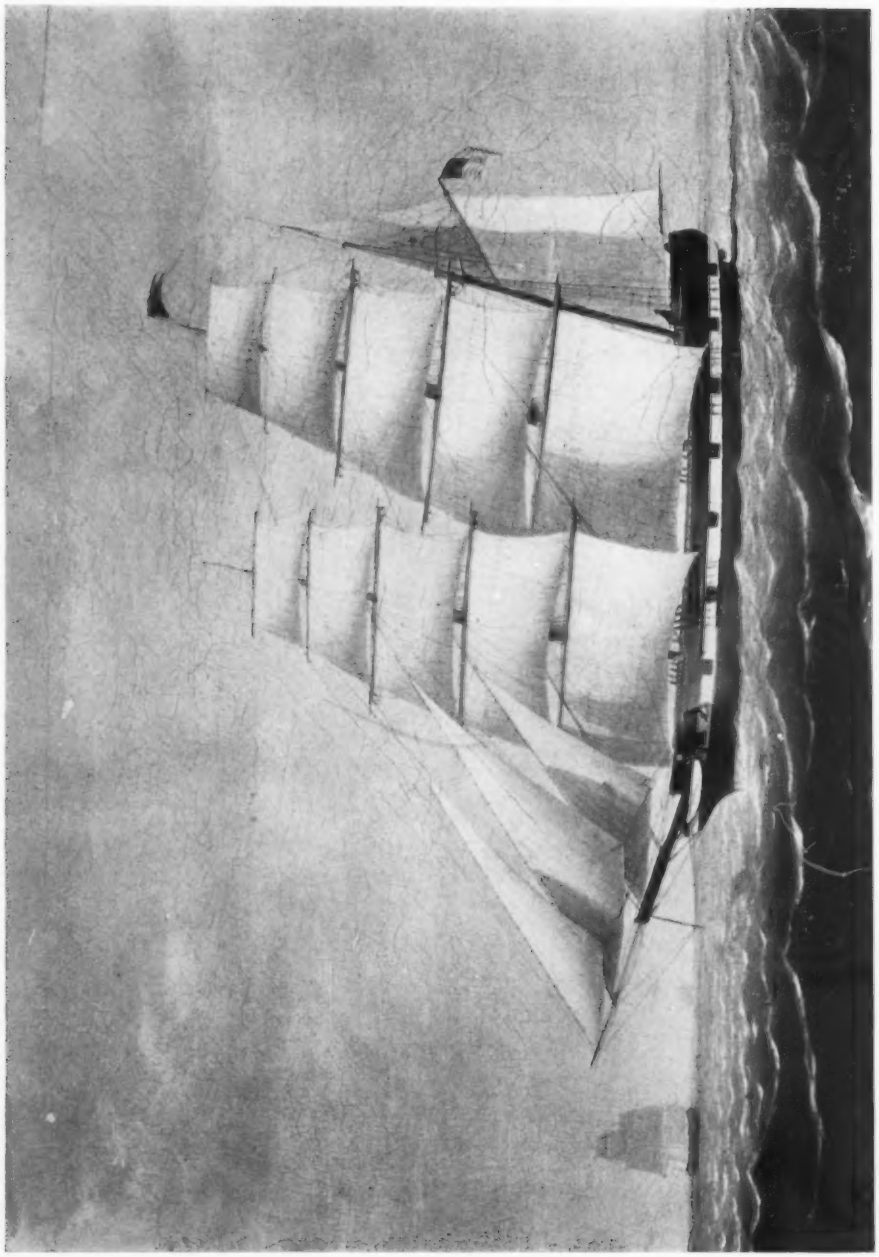
[6] *U. S. Nautical Magazine and Naval Journal*, III (1855-1856), 11 et seq.



Steam packet *Antelope*

Lithograph by Fitz Hugh Lane published in the Nautical Magazine

PLATE 4

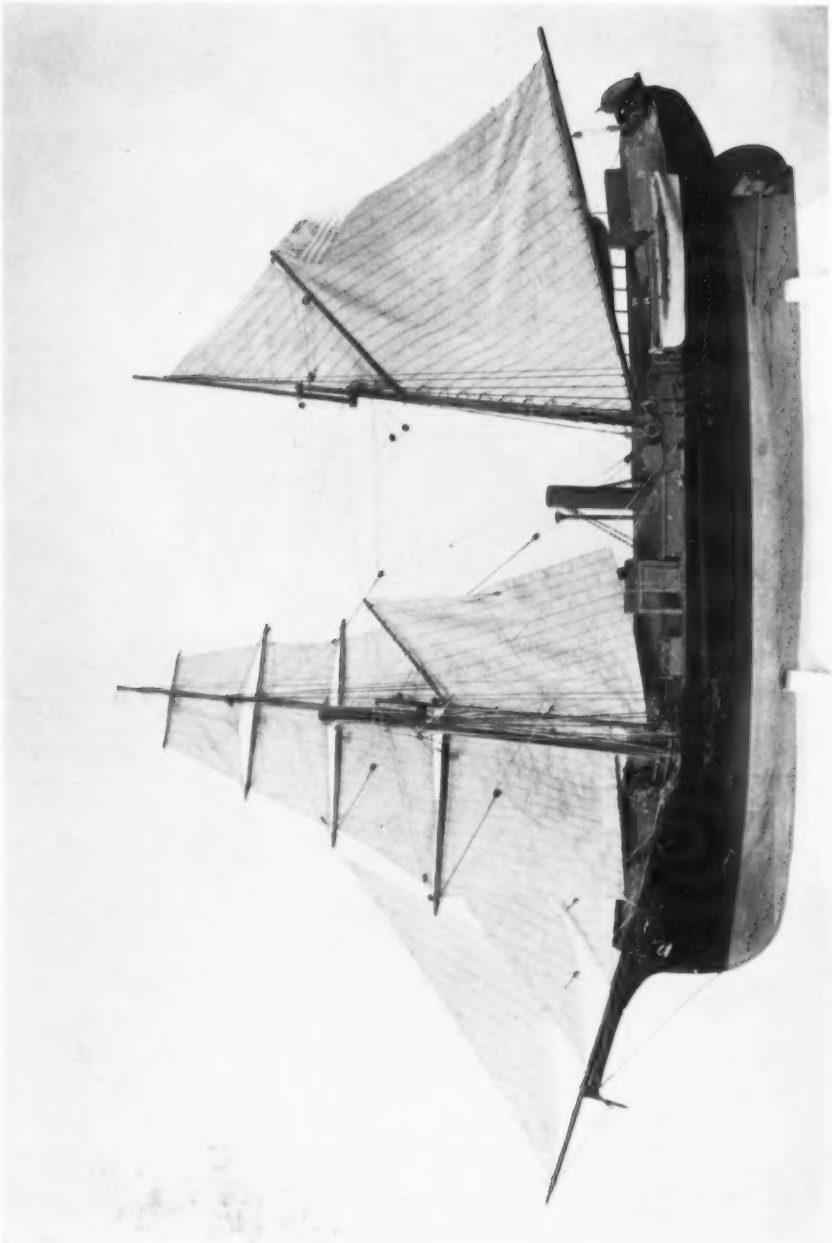


Steam bark *Edith*

Oil painting in Museum of the U. S. Naval Academy, Annapolis

Steam bark *Edith*

Oil painting in Museum of the U. S. Naval Academy, Annapolis



Steam topsail schooner *Midas*

Rigged model built by Robert Bennet Forbes for the Massachusetts Historical Society, now lent to Peabody Museum of Salem

coal. Although many steamers of her period used forced draft blowers, she had none.

Her auxiliary equipment included a fire pump and a hydraulic ash hoist. Two propellers were tried and the Griffiths screw, of English manufacture, chosen because it reduced vibration; this type of propeller, with its large spherical hub and blades unusually wide at the base but narrow at the tip, was very popular in this country and was used in a number of our naval vessels. There was no lifting gear; the propeller was uncoupled and allowed to run free when sailing.

Forward, in the hold, was the magazine equipped with flooding cocks; at the end of the forecastle came a watertight bulkhead; before the boiler, a double bulkhead with insulating material between to protect the cargo from excess heat. Seventy-five tons of coal were stowed in bunkers on either side of the engine room.

A large crew of twenty-one was planned for so small a vessel:

Captain	8 Seamen
2 Mates	2 Firemen
2 Engineers	2 Landsmen
Gunner	Steward
Carpenter	Cook

Nothing is known of her career. Forbes states that she was built for Russell and Company for use in Chinese waters, but the American Lloyds Register gives Forbes as her owner. The *Antelope's* name was dropped from this list only two years after she was built.

Aside from naval vessels, these four Forbes ships were the chief examples of the steam auxiliary as developed in the United States. Later, the type was to appear again for sealing and whaling in Arctic waters. Prior to the Civil War, however, such craft did not seem to fit into our pattern of maritime activity.

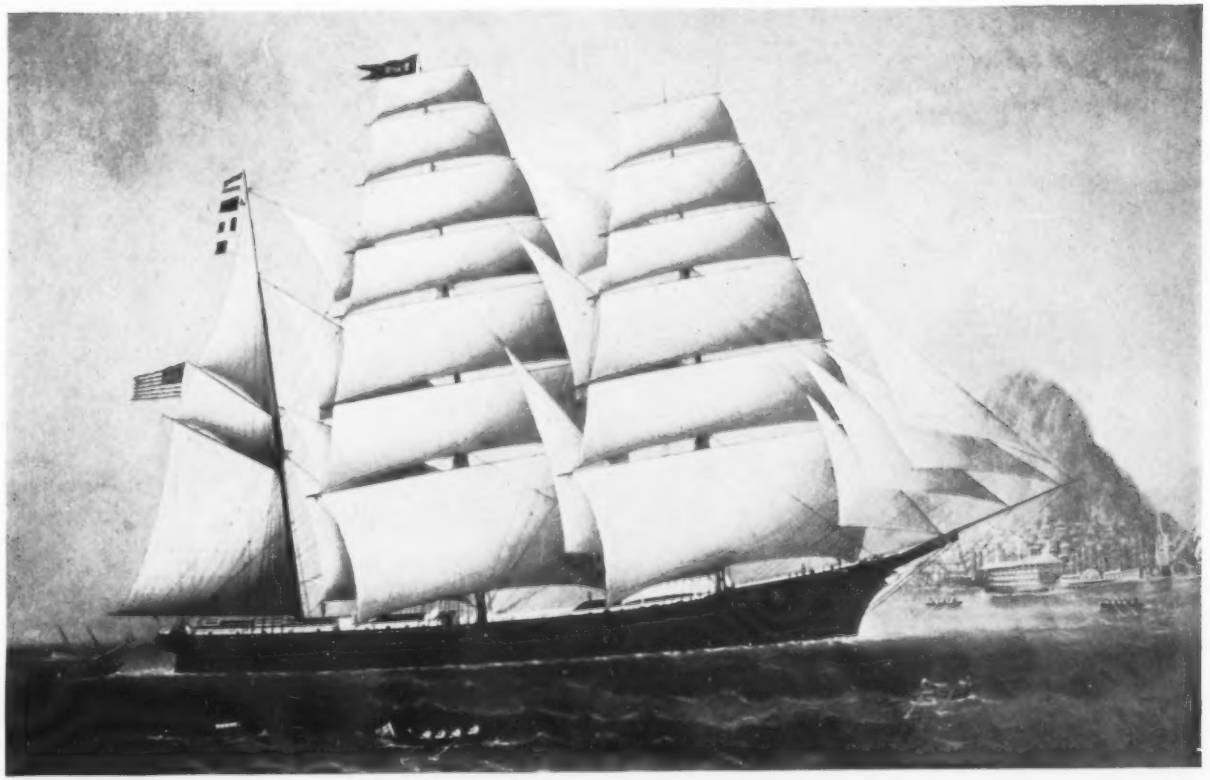
A Boy's First Day at Sea in the Bark Belle of Oregon - 1886

BY WILLIAM B. STURTEVANT
East Boston, Massachusetts

AS a boy my greatest desire was that some day I would follow the sea. Possibly I may have inherited some of this from my family but at that time many of the people of East Boston were sea minded. Most of the men I knew were engaged in the shipping business.

Donald McKay left East Boston when I was about eight years old and retired to Hamilton but a portion of his yard on Border Street was taken by the firm of Smith & Townsend and another part by Campbell & Brooks. D. D. Kelley's yard was still in existence. Of the ships built by Smith & Townsend I remember three: ship *Independence*, ship *Luzon*, and bark *John D. Brewer*. At Campbell & Brooks I remember the ship *Governor Goodwin*, and bark *Freeman*. There were three mast and spar yards operating, two rigging lofts, with the forges of Kennison and Edward Preble, ship smiths. There was also the block factory of Bagnall & Loud. Besides these there were ship-joiners and old workers, those who made repairs on ships, sail-makers and caulkers.

A short distance from Donald McKay's old home was a small basement cobbler shop where each night you could see 'old Cal' and his man, each with a mouth full of wooden pegs, busily engaged in putting taps on boots. Around the room there would gather, after they had their supper, men who would come in to smoke their pipes and talk about the different ships they were working on. I remember hearing George Young, a ship-joiner, tell how it was necessary in order to finish his work to continue down to Boston Light in the ship, and how the mates had been obliged to use knock down arguments in order to get the sail on her. I liked to go into the mast yard where a friend of mine was working on spars. His father made spars for Donald McKay and he went to work in the spar yard when he was only ten years old. I liked to sit astride the big mast facing him and watch the long shavings that would curl from his plane. They had such a salty smell. We boys spent most of our time playing around the wharves. There was one old bark called the *Moonbeam* slowly rotting



Bark *Belle of Orgeon* entering Hong Kong

Oil painting by Chinese artist

PLATE 7

away, and it is a wonder that we did not meet with a serious accident as we ran all over her rigging.

I am afraid I didn't try to please the teachers at school and consequently was often sent home. My idea was that I would be allowed to go to sea, but my mother seemed to have a faculty of straightening things out, so I would be obliged to return!

While in the graduating class of the grammar school, a large ship anchored between the East Boston ferries, waiting for her crew. Her hull, mast-heads and bowsprit were pure white, her spars were scraped bright and on her stern in large gold-leafed block letters was her name, *Paul Jones* of Portsmouth, New Hampshire. She also carried a figurehead of Paul Jones in uniform. It was no use, however, as I was told I must finish school, but I was promised that after that I would be allowed to make a voyage.

There was a newspaper published in Chatham Row, Boston, near the Custom House, called the *Shipping List* and in it was the list of all vessels bound for Boston from different ports. I was watching for the bark *Belle of Oregon*[1] which was on her way from Illoilo. My parents knew the mate and thought it would be better for me to go with someone I was acquainted with. I afterwards discovered that it would have been easier for me perhaps to have gone with a stranger. However, I began to make my preparations. With another boy to help me, I went over to McQuarrie and Chisholm, outfitters on North Street, and bought a blue tumble-in chest, for, of course, I couldn't think of going to sea without a sailors' chest. We carried it home and my mother attended to the packing. Another thing which I have thought since was a mistake were letters from relatives and friends smuggled in and placed between the clothing.[2] In due time the bark came in, discharged her cargo and went to New York to load case oil for Saigon, Indo-China. I was given directions just how to get to New York, and also some post cards which I promised to send back as soon as I arrived.

Dodd's Express Company took my dunnage to the bark, which was lay-

[1] For an account of the *Belle of Oregon* (built at Bath, Maine, in 1876), see Frederick C. Matthews, *American Merchant Ships*, 1850-1900 (Salem: Marine Research Society, 1930), pp. 44-47. The figurehead of this vessel is preserved on the grounds of the Webb Institute of Naval Architecture, New York City.

[2] Perhaps I should explain my reference to the letters smuggled into my chest before leaving home. While I was seasick I naturally was homesick and I would have given anything to be able to walk ashore, but as the sickness wore off I began to feel more at home until I had occasion to get something out of my sea chest. Then I would find a letter addressed to me 'Somewhere, don't know where.' All the homesickness would return and this was repeated two or three times until I dragged the chest out on deck, turned it upside down and shook everything out. Then I repacked it, finding several more letters, which I read all at once and then recovered for good.

ing at Java Street, Greenpoint, Brooklyn. My things were soon on board, and I found my berth in the half deck-house, which I shared with a boy from Maine.[3] We were put to work at once, and didn't I feel important as I swept the deck with a big Chinese broom! I was already half way to the captain's job. How was I to know what changes would take place in the next forty-eight hours. It reminds me now of that once popular song *Ain't It Funny What A Difference Just A Few Hours Makes*. The crew came on board the next morning before daybreak and after their 'shore duty' was over they were about half alive. Several of them had to have their noses tickled before they came to. We were all given black coffee, which after several attempts I managed to swallow, and then came a loud order to 'turn to.' I pulled and hauled with the others but I worked so hard that soon my hands were full of blisters, and when they broke the salt water made them very sore. When it came time for breakfast I could only drink some coffee. The salt beef I couldn't swallow; it smelt bad. I think we were allowed about fifteen minutes and then were hustled out to make sail, the tow boat having got us by Bedloes Island, which, by the way, did not have the Statue of Liberty completed.

The wind was quite cold and the sea choppy, so that I began to be sea-sick. When it came time for dinner I didn't care if I never had anything to eat. After dinner I was given the job of stowing the holystones that had been dumped in the carpenter shop. Some of these stones were about the size of six bricks. A square iron band fitted over the top and a wooden handle was set in a socket so that when in use they were hauled back and forth, athwartship on the deck, the sand and water cleaning the planks and planing them level. The small ones were about the size of one brick and were used to get into the corners: these were called 'prayer books.' Weak and sick, I had to double up and crawl under the carpenters' bench dragging in and piling the stones so that they wouldn't come down until wanted. There was no let up, and one thing after another followed until supper time. At this meal I was introduced to hard tack, but it was so filled with weevils that the tack, which was usually hard enough to break with a hammer, would fall to pieces at the slightest shake. However, it made no difference to me, for I couldn't eat anything.

Just before dark the watches were picked and I found myself in the mate's watch. We went below until eight bells (8:00 o'clock) and then came on deck until midnight. Just before midnight it was decided to furl

[3] The half deck-house had a tier of barrels of beef and pork, as there wasn't room for them in the fore peak. These barrels would leak more or less and as they were not a first class product you can imagine that, mixed with the smell of bilge water, it was a poor sanitarium for a boy in my condition.

the main skysail and I was sent up aloft with a sailor. I was given to understand in no uncertain language 'to look sharp' because next time I would have to go alone. I certainly wasn't in first class condition to go aloft; seasick, tired out, hands so sore that it was painful to close them, and I had eaten nothing since we started, but I started up the main rigging. It was pitch dark, very cold (February) and the bark was pitching and rolling considerably. The sailor was soon out of sight but I climbed as fast as I could. When I got to the futtock shrouds, which is the only sailor-like way of getting over the main-top, I felt for a moment that I couldn't do it. But I reasoned that if the sailor had done it I must. Well, I got over it after a struggle, but I felt as though I had a handful of knife blades. As long as there were ratlines to step on I managed, but, when I arrived at the eyes of the topgallant rigging, I found no more ratlines. To get up to the royal and skysail I must shin on a backstay or anything I could find.

While I was considering the best way to get there a hoarse shout came up from the deck to 'get to hell out on that yard.' No reply was expected, so I laid hold of some gear and started to shin. The sailor on the yard was having trouble because the buntlines had been hauled up too high and needed to be slacked. He was cursing and dancing around on the footrope trying to make them hear him on deck. He finally got what he wanted and then the sail was furled. I watched very carefully, for I realized that it wouldn't be very healthy for me not to know what to do next time. Well, it was finished and we started down the rigging. He was soon out of sight, but I had to be careful. My watch had gone below and as it was about 1:00 A.M. I knew I had lost one out of my four hours.

This was not the end of a perfect day but it was the end of my first day at sea — 3:00 A.M. to 1:00 A.M. — 22 hours. Not exactly banking hours, and all for the munificent wage of $5.00 per month and found. Wages of an 'AB' at that time were $14.00 a month out of New York and £2/10/– out of Liverpool.

The pleasant weather of the next few days revived my spirits and I found myself enjoying the second dog watch very much. One of the songs that caught my fancy was 'The Oxford' and as it seems appropriate to use it at the commencement of any voyage I will include two verses and chorus. This crew as a whole had fairly good voices and in a chorus they sounded well.

1. 'Twas in London in the cold month of December
That I found that all my money it was spent.
How I got there I don't just remember,
But I down to the shipping office went.
On that day there was a great demand for sailors,
For India, China, Java and for France,
So I shipped before the mast on the *Oxford*
And we went away to booze all our advance.

Chorus:

Then its get back, give in the slack,
Bear away your capstan heave a paul.
'Bout ship staysails boys be handy,
Then its raise tacks sheets and mainsail haul.

2. We all came on board a Sunday morning,
And everyone was heavy on the booze,
So I sat down on my chest aquietly thinking
Whether I'd turn in my bunk and have a snooze.
When I heard a voice loudly calling,
I listened and I heard that voice again.
It was the chief mate at the forecastle door a-howling!
Come lay aft boys and answer to your names.

Chorus: etc.

The Historic American Merchant Marine Survey

BY FRANK A. TAYLOR

Curator, Division of Engineering, United States National Museum

The Historic American Merchant Marine Survey was a Federal project of the Works Progress Administration employing unemployed naval architects, draughtsmen and shipyard workers to take-off and draw-up the lines and details of old American watercraft. The work produced by the Survey is preserved in the Watercraft Collection of the United States National Museum—Smithsonian Institution, Washington, D. C. Blueprints of drawings and prints of photographs may be obtained at cost from the National Museum by ordering in accordance with instructions contained in a brief list sent without charge upon request.

THE suggestion for a nation-wide survey of remaining examples of old types of American watercraft to be executed by unemployed shipyard and boatyard workers was made by Eric J. Steinlein. The plan as finally put into operation provided for the actual execution of the work by the Works Progress Administration. The United States National Museum in the nominal position of co-operating sponsor acted only in an advisory capacity toward the actual work, and undertook to preserve in the Watercraft Collection the material to be produced. Upon Mr. Steinlein, as Director of the Survey, rested the entire responsibility for the organization and execution of the work.

With little precedent for the organization of a project of this kind, the first step was to divide the coasts and inland waterways into what appeared to be reasonable subdivisions and endeavor to find supervisors and personnel to carry out the work in each. Museums, libraries, schools and individuals co-operated splendidly in recommending supervisory personnel and the Director soon had offices established in about eight of the sixteen regions tentatively marked off.

The policy of the Survey in regard to what types of vessels should be surveyed was very general. Supervisors were asked to report all old vessels in their regions which appeared to them to have historical interest, keeping in mind the desire to make the greatest effort to survey types of vessels about which information was not otherwise readily available.

Upon receipt of these reports, which included the name, type, date, condition, and availability of the vessel for survey, the Director indicated the order of work, on a basis of obtaining early surveys of the vessels most likely to become unavailable. Included in the reports were sources of data other than actual vessels, which included plans and builders' models in the possession of shipyards, sail-makers, collectors and museums. The desirability of working up material from these sources was determined upon the basis of the historical interest of the material, its lack of accessibility to students generally, and the danger of its becoming lost. It was recognized that almost everything of this nature could be worked up advantageously by the Survey but selections had to be made in order to employ the limited facilities of the Survey where it could accomplish the most. Frequently in actual practice the subjects of the surveys were determined by their availability, the weather, lack of other material, the qualifications of the personnel and other reasons in no way related to the desirability of the material.

The operation of the Survey was effected by sending parties of men to the vessels or the material to make measurements of the vessels, copy drawings and plans, or lift the lines of half models. This information, with various sketches and notes on the construction and histories of the vessels, was returned to the offices, where the finished drawings were made and the reports written. In some regions the field work and office work was performed by the same personnel: in others there was a division of the work.

Wherever possible a vessel was measured on a railway or, if a small craft, on the beach. The sources of all information were carefully noted in each instance. Except for sail plans from sail-makers' draught books no survey was completed or catalogued unless the lines of the hull were obtained. An average objective in a survey of a vessel was to obtain a drawing of its lines, including waterlines, body plan and profile, a sail plan and/or outboard profile, a deck plan, inboard profile and midship section showing construction.

Photographs were recognized as an important part of the Survey but the funds were not available to equip the offices with the proper photographic supplies. As a result the workers made photographs as best they could, using their own cameras. The photographs were largely confined to details of unusual construction, carvings, rigging, etc., and include relatively few that would interest the collector of photographs of ships and boats. These photographs, the original field notes and sketches, and the descriptive reports on the vessels are filed in loose-leaf notebooks

paralleling the files of drawings. All of these may be readily consulted at the National Museum.

For those interested, there is available a *Catalogue of Drawings and Photographs Produced by the Historic American Merchant Marine Survey for the Watercraft Collection.* This lists the vessels by survey number, name, type and date, arranged in groups according to the regions in which the surveys were made. This means that vessels are not always listed in their home regions. Some Chesapeake types were surveyed in Florida and a number of vessels built in New England were sent in from the San Francisco office. The catalogue indicates the number of drawings and photographs in each survey and attempts to describe the details contained in the surveys without indicating what is shown by each individual sheet or print.

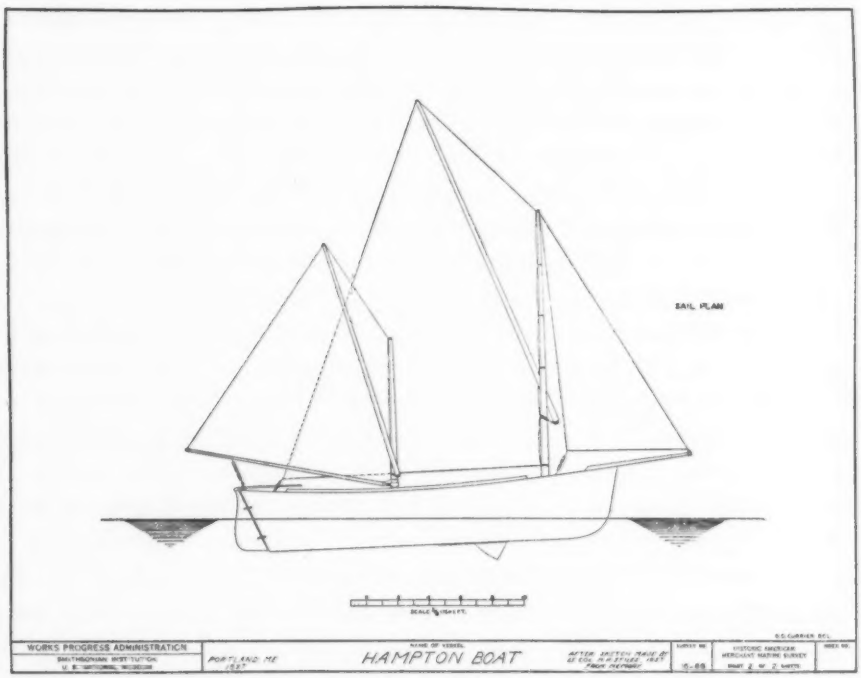
The completed work of the Survey now in the Watercraft Collection includes surveys of 426 different vessels, totaling 1,044 drawings and 550 photographs. The variety and scope of these is wide as will be indicated by considering the work of the various regions.

The headquarters office for Region 1, Maine, was established at Portland a short time before the work terminated and only seven surveys were completed there. These include the freight and towing steamer *Pejepscot* built at Bath in 1907 by the Portland Railway and Shipbuilding Company for the Bay Shore Lumber Company; the screw river steamer *Louise* built at South Portland for the Songo River Steamboat Company, register not found; the coasting schooner *David Torrey* built by Richardson and Stubbs at Bath in 1873 for W. S. Jordan; the three-masted coasting schooner *Nimrod* built in 1891 by George Christenson for R. C. F. Hartney, for the coasting trade; the kettle-bottom ship *Mount Washington,* probably built in Maine about 1840, records not found; one unidentified vessel; and the auxiliary schooner *Joseph Warner* for which no report was received. All of these consist of lines, only, taken from half models.

Many more half models and plans were available to this office than could possibly be drawn up during its short existence. Fortunately the lines were lifted from some two hundred and thirty models in and about Portland and about sixty at Bath. These are principally large schooners, ships and barks of the late nineteenth century. They include a few examples of other types large and small and one as early as 1811. These models and plans were courteously made available by their owners, among whom are builders, collectors and the Penobscot Marine Museum at Searsport. It should be noted that these are not in form to per-

mit ready reproduction and prints cannot be furnished. They are well indexed, however, and can be used freely at the Museum. A few of these, such as the lines of Hampton fishing boats, and the ocean barge *Rondout* built at Bath in 1896, were drawn up in finished form by the California regional office.

The history of the watercraft and shipping of New England has been the subject of such lively and persistent scrutiny that it is difficult to



Hampton boat. Sail plan of about 1897

From a sketch by H. R. Stiles, Lt.-Col., U.S.A. Retired. Specimen drawing produced by the Historic American Merchant Marine Survey. Actual size 17 *by* 23 *inches*

point out many types of fresh interest. Even the smaller local types have been made familiar through the yachting activity there and the pages of the boating papers. Of the vessels surveyed, the Hampton fishing boat is one of the few that appear to have escaped wide notice. These are small open boats, 20 to 25 feet in length in which trips of two and three days' duration were made to banks forty miles southeast of Portland in almost any weather.

Mr. Steinlein was acquainted with the type and Howard I. Chapelle, who was Regional Director of the Survey for New England, produced

two half models from which several early boats had been built. These, and a sail plan reconstructed by H. R. Stiles, Lt.-Col., U.S.A. (Ret.), who had in 1897 owned one which was then old, were used as data from which to prepare two surveys of the type. These show the old Hampton boat to have had a high bow, plumb stem, straight sheer and deep drag. It was decked over forward and rigged with bowsprit and jib, a loose-footed sprit mainsail and a small jigger spritsail set with a boom. A small centerboard was located well forward.

Colonel Stiles makes the following comment in regard to their sailing:

> The full rig of three sails was used only in light weather and when sailing free. The mainsail alone did the work for anything but very hard winds, for, though it could not be reefed, the loose-footed sail could be trimmed so that the boat would go to windward well with nothing but the after third of the sail drawing, the balance of the sail being backwinded, though not shaking, and in running off, the mainsail without the sprit, set sufficiently well to be of good driving power.
>
> When it blew so hard that nothing could be done with the backwinded mainsail, the boat could be taken to windward in a very hard chance with the jigger stepped as shown and nothing else on her. Jib and jigger were never used.
>
> It is hard to convince yachtsmen that this was possible but I have done it and seen it done time and time again. It has to be blowing hard and the boat has to have a certain amount of weight in her. The high bow of the hull, plus the extreme drag at her heel and the small forward centerboard seem to make it possible for a boat of the model of the Hampton to carry this after sail and be manageable to windward.

The Maine office also sent in fifteen 5 by 7 inch negatives of four-, five-, and six-masted schooners built at Bath about 1900 to 1908. These are of the not uncommon type of fine photographs of vessels ready to launch or on their trials.

The principal regional office for New England was that of Region 2, located at Wollaston, Massachusetts, under Mr. Chapelle as Regional Director and D. Foster Taylor, Supervisor. The work produced by this office which operated in New Hampshire, Massachusetts and Rhode Island, consists of eighty-three surveys including about one hundred and seventy finished drawings.

Outstanding in these are the survey of half models of the vessels operated by the firms of William F. Weld & Company and Weld & Baker, built between 1849 and 1868, and the survey of Piscataqua River gundalows. Each of these is of particular merit because of the careful and full reports by Foster Taylor which accompany them. The Weld surveys consist of the lines of twenty-two of the twenty-six half models in the collection of Mrs. Charles Goddard Weld, Brookline, Massachusetts, who

courteously made the models available. The vessels of which the drawings were completed include those built for the Weld firms from the bark *Fenelon* of 1849 to the ship *Java* of 1868, probably as complete a record as exists of the designs of vessels procured by an active and wealthy shipping firm during the period in which American sailing shipbuilding and operating is thought to have reached its peak. It would be interesting to compare the earning records and efficiency of these vessels with their designs, which include examples of the pre-clipper, extreme clipper, medium clipper, and modified clipper types.

The surveys of the gundalow include the lines and sail plan of the *Fanny M,* the last old one to sail, and now abandoned, the lines of a model and the lines of one now building. Foster Taylor's report is a description of the type, its evolution and use, so complete that it should be published. It will not be described here in the hope that Mr. Taylor will prepare an article on this and the beautiful model of the gundalow *Fanny M* that he made for the Peabody Museum of Salem. A nicely made, rigged model of the type was procured for the Watercraft Collection from Captain Edward H. Adams, the last active gundalow captain.

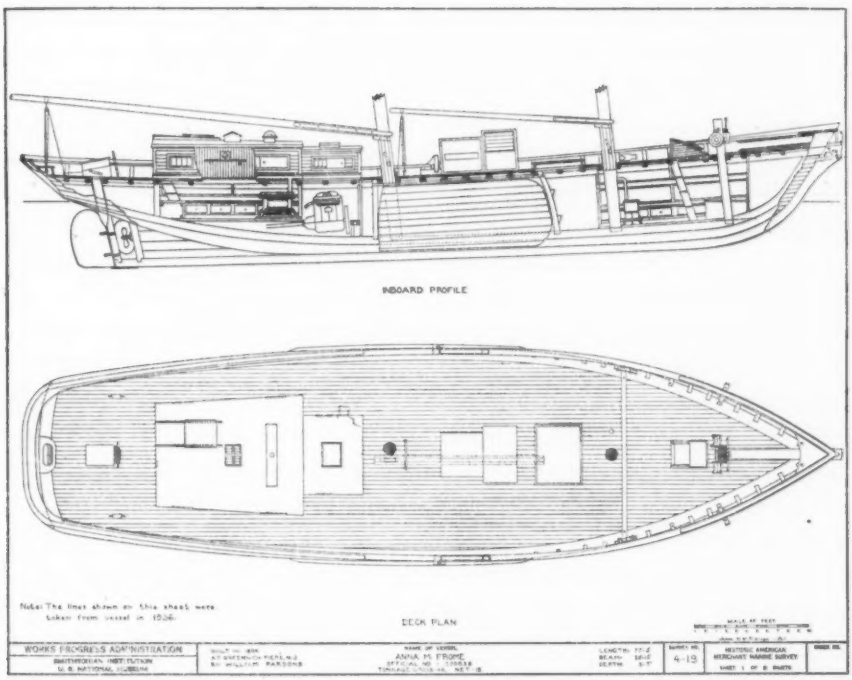
Other types surveyed by the Wollaston office include the No Mans Land boat, the Friendship sloop, the New Haven sharpie and the Whitehall boat, all of which have been described by capable writers in the past. The survey of the No Mans Land boat was made from an earlier survey by Marion and Dorothy Brewington of an original hull and another from an existing builder's model. A model of a Tancook whaler was made available for a survey and subsequently presented to the Museum by George H. Stadel, Jr. Several fine schooners designed by Captain Thomas F. McManus and built by Tarr and James in the early nineteen hundreds were obtained from the designer's drawings in the builders' possession.

The officers of the Peabody Museum of Salem, the Massachusetts Institute of Technology, the Portsmouth Atheneum and the Penobscot Marine Museum, Searsport, were very gracious in granting permission to use their collections and the lines were taken off of a number of most interesting half models in each of these. Though the activity was in no sense a records survey, clerical personnel of the Wollaston office copied enrolment records for the port of Gloucester in the Essex Institute. The first twenty-five volumes of these, covering the years 1789 to 1870, were condensed to ten readily handled manuscript volumes.

The New York office of the Survey produced only two surveys originating in the region, but performed a substantial volume of draughting

for other regions not staffed with draughtsmen. One of the surveys is of a Hell Gate pilot's row boat of 1886, the other is of the lines and sail plan of Griffiths' ship *Sea Witch* of 1846. These were made from small drawings or tracings in the possession of Griffiths' granddaughter.

Two surveys of considerable interest that could be credited to the New York region though by the administrative procedure they were not, are those of Connecticut River dragnet boats. These were made



Schooner *Anna M. Frome*. Built at Greenwich Piers, New Jersey, 1904
Inboard profile and deck plan. Specimen drawing produced by the Historic American Merchant Marine Survey. Actual size 17 by 23 inches

from half models borrowed for the purpose by Charles A. Goodwin of the Wadsworth Atheneum, Hartford. Both are by the same designer, Captain Adrian Tooker, though one is of the *Red Jacket* of 1900 and the other a boat building in 1938. Mr. Goodwin also sent in several fine old photographs of dragnet boats which were usually found racing when not shad fishing.

At Wilmington, the office established for the region of Delaware and southern New Jersey, produced about thirty surveys of a wide variety of types large and small. Wooden shipbuilding on the Delaware in the

last quarter of the last century was well represented by the work of the Jackson and Sharp Yard at Wilmington. Surveys made of half models at this yard include the large three-mast schooner *Daniel S. Williams, Jr.* built in 1877 for the coal trade, the three-mast schooner *Emelie F. Birdsall* built 1874, the steam-propeller *John G. Christopher* built in 1892, and the bark *Sarah S. Ridgeway* built in 1877 which made fine runs of twenty-six days from Rio de Janiero to New York loaded with coffee and from Hong Kong to New York in ninety-three days with tea. This vessel had a medium clipper hull. The South Jersey oyster schooners are represented by the *Elsie M. Reichert* built at Bridgeton in 1898, the *Anna M. Frome* of 1904 and the *Nordic* of 1926. All of these surveys with the exception of the *Elsie M. Reichert* were made from half models, several of which were obtained for the Watercraft Collection. The *Nordic* is a spoon-bow type of schooner representing the invasion of these waters by the modern fisherman profile. Under water, however, it is still a centerboard oyster schooner. The sail and deck plans of this survey were made from the vessel.

Many interesting small types of the region not readily found in the literature include oyster-tonging and clam garveys, sharpie-rigged and motor-powered sturgeon skiffs, a schooner's yawl boat and a pot-fishing skiff.

The work of recording the Chesapeake Bay types was divided between an office at Baltimore and one at Hampton, both within Region 5. In this region the problem was not so much one of finding the older types of vessels as it was to find them where they could be surveyed. Smaller boats such as the log canoes were relatively easy to secure and a fair variety of these was surveyed. Others, such as the pungies were not finally obtained out of water until after the Survey terminated. However a total of thirty surveys was completed including bugeyes, skipjacks, round-bottom sloops, centerboard schooners and canoes. The timeliness of the Survey is indicated here by the fact that three vessels that were active on the Bay when surveyed are no longer available. The schooner *Smith K. Martin* built in 1899 has been lost; the *William Wesley*, almost the last of the round-bottom sloops, built in 1874, has gone from the Bay and rumor has her abandoned or cut down into a power boat; and the pungy *Amanda F. Lewis* has been rebuilt into a power trawler and gone menhaden fishing in the Gulf of Mexico. (The survey of this last has not been completed and is not available for distribution.) The Hampton office contributed part of the above and in addition did a Chincoteague sailing bateau of 1928; a crab car with a hinged propeller shaft for landing on the beach, and a Staten Island oyster skiff. The Mariners' Mu-

seum kindly permitted several of their original full-size craft to be surveyed and in addition made available the collection of George Steers' half models. Among these is the famous pilot schooner *Mary Taylor* built at New York in 1849.

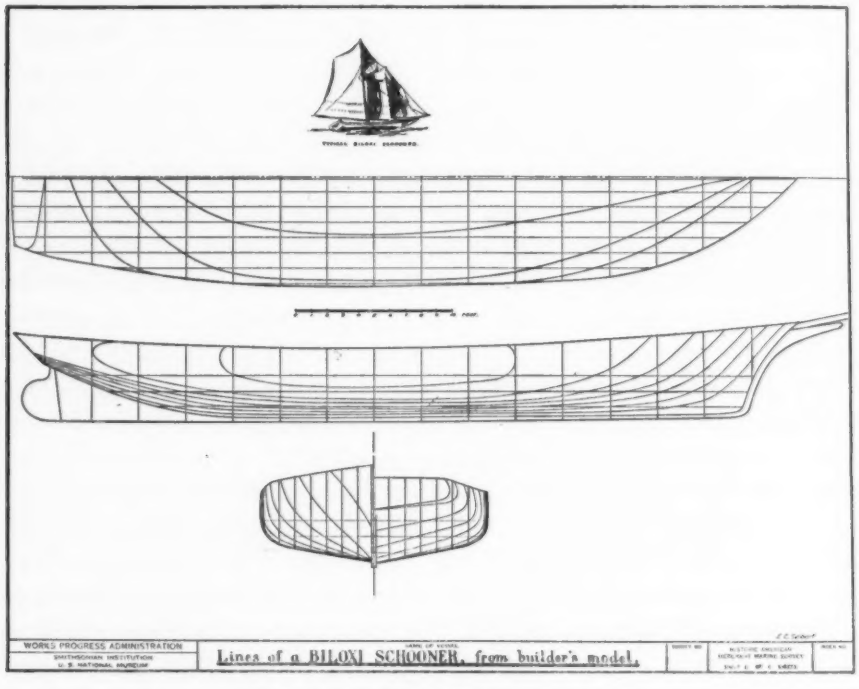
South of Hampton no opportunity was found to organize offices other than the two in Florida. This omits from the Survey the vessels of the coasts of the Carolinas and Georgia and the Gulf Coast west of Florida. The best practicable effort that could be made in this direction was to detail Philip Sawyer, an artist attached to the Washington office, to make a quick trip along the coast from Virginia to Texas, sketching and photographing as he went. Though not an orthodox or scientific procedure it did result in a fair sampling of available material.

Mr. Sawyer photographed several North Carolina sharpies and measured one, the sharpie schooner *Chase*, completely enough to constitute an adequate survey of the type, though it has not been drawn up for distribution. The *Chase* was built at Moorehead City, North Carolina, in 1903. From the other end of his swing, he brought back several dozen small negatives of the scow sloops fishing out of Port Isabel, Texas. Boatbuilders all along the coasts were very generous and gave him a total of about forty half models for the Watercraft Collection. Many of these are of types of commercial fishing vessels now building in the yards, including a variety of tow boats and small power boats of many kinds, but others are of older types saved by the successive generations of builders at the yards where they were found. Identification of these earlier ones is not complete but they include a Louisiana lugger of about 1890, several Biloxi-built schooners dated from about 1860 to 1917, the oyster sloop *Spectre* built at Berwick, Louisiana, in 1883, and the stern-wheel Florida river steamer *Thomas A. Edison* built at Appalachicola in 1901. Where he could, Sawyer collected old photographs of sailing vessels and their activities and made dozens of photographs of everything now working that came to his attention.

Unfortunately none of the material collected by Mr. Sawyer is included in the *Catalogue* mentioned above and can only be used at the Museum. It is described here chiefly because it represents a substantial endeavor to fill a void in the record left by the inability to operate the Survey in important and fertile regions. Unfortunately not even this much was accomplished in the Mississippi and Ohio River regions and in several other smaller but also important places.

In Florida the project was almost an 'American' survey in itself. The Maine schooners *Lydia Grant,* 1879; and *William Bisbee,* 1902; the Long

Island sand-bagger racing sloop *Cheemaun,* 1872; the sloop *Charry M.,* formerly registered as a schooner, built at Moriches, New York, in 1866; the topsail schooner *Meta* built for a yacht at Pamrapo, New Jersey, and for many years a St. Johns River pilot boat; the Philadelphia-built iron tow boat *Philadelphia,* 1883; several Chesapeake Bay types; the schooner *Virginia* built at Mobile in 1865; the Biloxi schooner *Mary Celina,* 1902;


WORKS PROGRESS ADMINISTRATION
SMITHSONIAN INSTITUTION
U. S. NATIONAL MUSEUM
Lines of a BILOXI SCHOONER, from builder's model.

Biloxi shrimp fishing schooner

Lines from model made at Handsboro, Mississippi, before 1924. *Specimen drawing made and presented to the Watercraft Collection by E. C. Seibert, Commander (C.E.C.), U.S.N. Actual size* 17 *by* 23 *inches*

two Bahama fishing sloops of uncertain age; and a Nicaraguan cayuca; indicate the variety of the 'foreign' vessels surveyed in Florida waters.

The remainder of the fifty-two surveys represent the native Florida types reasonably well. Early sponge vessels are illustrated by the double-ended schooner *Beede,* place and date of building 'Unknown' but certainly one of the early ones, and a survey of the rigged model called *Hydra* which tradition says is a model of one of the first two lateen-rigged, one-mast, double-enders of the Mediterranean type introduced into the sponge fishing industry about 1898. Later sponge vessels in-

Scow schooner *Augustus*. Built at Spoonville, Michigan, 1897
Photographed entering Ludington Harbor

Sloop *Zingara*. Built at Bodkin Creek, Maryland, 1852
Photographed on a railway at Baltimore, Maryland, 1937

Schooner *Treandrea* (ex *Elias*). Built at Tarpon Springs, Florida, 1918

Steamer *De Pere*. Built at Manitowoc, Wisconsin, 1873

Photographed entering Manitowoc Harbor. Photograph by courtesy of Captain E. Carus

clude the schooner *Treandrea* (ex *Elias*) built at Tarpon Springs in 1918, the sloop *Century of Progress* built in 1931, and a number of sponge dinghys dated 1923 to 1930.

Schooners built in the Keys are represented by the keel schooners *Hero* and *Louisa* built at Key West in 1868 and 1870 and the centerboard schooners *Island Home* said to have been built at Plantation Key in 1885, the *Newport* built at Key West probably 1885, and the *Speedwell* built at Marco, 1896. The *Hero* was a pilot boat during its first years and is said to have been the pioneer sponge fisherman in the Gulf of Mexico. The *Louisa* owns her share of the legendary fame that attaches to any old schooner in southern waters but her history gives the usual hurricane stories an added flourish by having her go 'aground' on an even keel in the crotches of two dogwood trees. She was easily refloated by means of a staging built up to her.

A number of sloops built at Abaco and Currant Island in the Bahamas, at Key West and Key Largo, and several sharpies, catboats and dugouts were included in the work. Though they are an interesting collection of plans most of them were not registered and their dates are not all well established. The *Pilot's Bride* build at Cedar Key in 1886 as a centerboard sloop and later converted to a keel schooner is said to have been one of the fast pilot vessels of her time.

It would be hard to find more barnlike examples of marine architecture than the stern-wheel river steamers *Okahumkee,* 1870, and the *Hiawatha,* 1898, but glamour touches everything in Florida and they carried the tide of golden tourists in the lush days of the last century. Similarly the workaday tow-boat service of the steam tug *Three Friends* built at Jacksonville in 1895 does not suggest her filibustering career in the Cuban revolution under 'Dynamite' John O'Brien, or as a correspondent's dispatch boat 'rung-up' on many a forced run in the best Richard Harding Davis tradition during the war with Spain.

H. L. Long was the Regional Director for Florida, John H. Hyde and A. E. Ferdinandsen were Supervisors. Mr. Ferdinandsen turned in a brief but interesting report on the use of the so-called 'cork tree' for frames, and knees, in small-boat building at Key West. It seems that much small stuff that has been described as madeira wood or horseflesh in Key West boats might actually be cork tree (*Thespesia populnea*) which grows right in the town where a natural crook for a stem piece or frame can be selected for almost any repair.

The Great Lakes region was divided into two sections of which Michigan east of Alpena was one with all of the Lakes region west of Alpena in

the other. Both of these were worked from the Chicago office under John R. Dalenberg, Regional Director, and the work produced is described together, here. About eighty-two surveys were received from both regions, nearly half of which are of small steamers of various kinds, with sixteen of large schooners, two classes of vessels that developed along lines dictated by the peculiar conditions of Lakes navigation and independently of developments on the coasts.

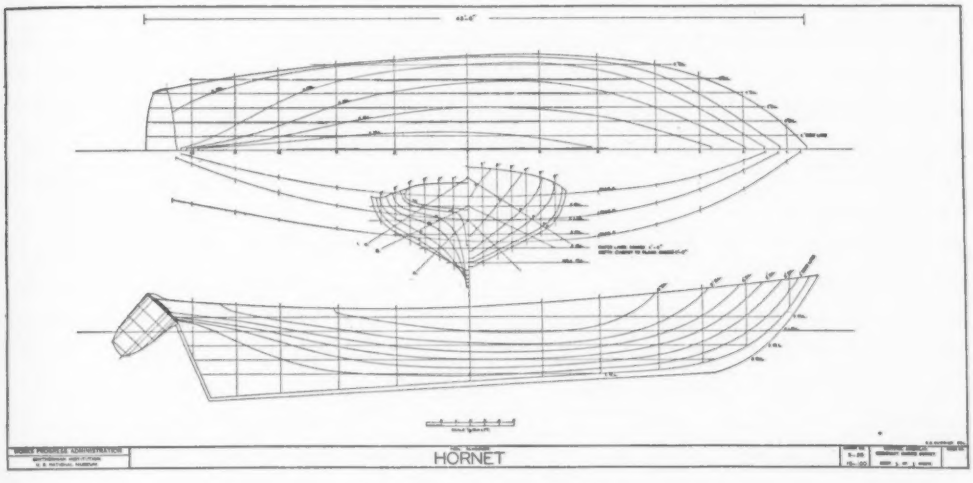
The earliest schooners in the survey are the *Mary Stockton,* the *Clipper City* both built in 1854, and the *Belle,* 1856, all three by S. Bates & Son, shipbuilders at Manitowoc, Wisconsin. These were designed by William Wallace Bates who was John W. Griffiths' western correspondent and partner in the publication of the *U. S. Nautical Magazine and Naval Journal.* The lines and sail plan of the *Clipper City* appeared in the *Nautical Magazine* (Vol. III, No. 5, February 1856), and the survey was prepared largely from these with reference to the mold loft notebook of W. W. Bates preserved in the Wisconsin State Museum, University of Wisconsin campus at Madison. This book contains notes and tables of offsets for the three schooners. The *Clipper City* was described as a successful departure from previous designs and was a fast schooner. The only vessel surveyed which might illustrate the older design is that of the *Vermont* built by J. Keating at Huron, Ohio, in 1853, the lines of which were lifted from the builder's half model.

The remainder of the surveys of schooners are of vessels built between 1871 and 1894. All of these have the flat-floored and wall-sided midship sections typical of Lakes schooners, but there is a decided difference in sharpness and rig among them. The three-mast schooner *George M. Case* built at Saugatuck, Michigan, in 1874 was a bluff-bowed 'canaller' designed to have the largest carrying capacity within dimensions required for navigating the Welland Canal. In contrast to this type, the *Lizzie A. Law* built at Port Huron in 1875 had a so-called clipper-bow and a reputation for a fine appearance. She originally carried lee-boards but after losing them in a storm and narrowly escaping the shore a centerboard was put in.

Many Lakes schooners upon reaching an advanced age were cut down and converted to tow barges but some like the schooner *Grampian* built at West Bay City, Michigan, in 1894 were built for short rigs and began as barges. The *Grampian* was a three-mast schooner without bowsprit though it carried a jib. The *Cora A* built at Manitowoc in 1889 was a fast schooner that in 1897 sailed from Chicago to Alpena a distance of four hundred and sixty miles in forty hours. In 1915 she went to

Montreal for a cargo for Europe and on 6 March 1918 foundered off Cape Hatteras. A photograph of the *Cora A* shows her with a full Lakes three-masted rig with a large squaresail on the foremast which also carries a square-topsail and topsail-yard with a triangular raffee above and a large fore-and-aft foresail. She carried three headsails and main- and mizzen-topsails.

Sail plans copied by the Survey include a number of variations of the Lakes schooner rig. One is of the *David Dows,* 1881, said to be the only five-mast barkentine on the Lakes. Several including that of the *City of*



Schooner yacht *Hornet*. Built in Maryland, 1819
Lines from half model. Specimen drawing Historic American Merchant Marine Survey
Actual size 17 by 36 inches

Grand Haven, 1872, are of the so-called Grand Haven rig, a two-mast rig in which the fore- and mainmasts are located about as the fore and mizzen of the three-mast rig with a staysail carried on a stay from the top of the mainmast to the deck just aft of the fore-boom.

The *Alice Royce,* built at Saugatuck in 1890, is a 40-foot, two-mast schooner described as a 'lumber hooker' that traded along the east shore of Lake Michigan. Surveys of two sailing scows were received, one of a scow schooner, approximately 118 feet in length with considerable deadrise to its floors, drawn from an unidentified half model, the other of a flat-bottom river scow of about the same length prepared from drawings of lines, sail plan, construction, etc., lent by Angus Smith of Algonac, Michigan. The writer's father sailed on scow schooners on the St. Law-

rence River, when a youngster, and he has mentioned several instances in which old schooner captains in their retirement would acquire sailing scows and retain some measure of activity and interest trading in them, along the Lakes and river shores. Small-boat surveys include several Mackinaw fishing boats and a river logging bateau built about 1890.

Most of the surveys of steamers consist of lines made from builders' models or drawings that have been preserved by collectors or long-established building firms, and a few include old photographs. The oldest vessels represented are the sidewheel, passenger and freight steamers *Huron* and *Planet* built at Newport (now Marine City), Michigan, in 1852 and 1855. The lines show that both had flat-floored, straight-sided, shallow hulls with very sharp waterlines fore and aft. In the photographs both have freight decks covered from bow to stern with sides extending over the guards so that the paddle boxes are flush. The cabin deck in each is open at bow and stern with cabins amidships. The *Huron* had angular hogging trusses made up of posts and rods. The *Planet* had these and also curved Bishop frames that extend well above the cabin roof.

The lines of the *Union* designed and built by W. W. and S. Bates at Manitowoc in 1861, were drawn from the builders' model. It is the oldest Lakes propeller in the Survey in addition to being an unusual design. The hull is flat-floored but the curve of the bilge is full and the sections flare to a knuckle seam from which they go up flat with a slight inboard slant. The rabbet turns up at the stem in an easy curve and returns inside of its foremost point before turning up and forward.

Nine steamers built by Greenfield S. Rand at Manitowoc in the sixties and early seventies are represented, including the sidewheelers *Orion,* 1866, *Northwest,* 1867, and *Sheboygan,* 1869, and the propellers *Navarino,* 1870 and *Oconto,* 1872. The *Oconto* was accused of starting the Green Bay fire in September 1880 and the *Navarino* was destroyed in the Chicago fire of October 1871.

Of the three steam barges included, the *Anna Smith* built at Algonac in 1872 and the *E. A. Shores, Jr.* built at Sheboygan in 1892 are represented by their lines only but the survey of the *Herman H. Hettler* (ex *Walter Vail*) built at West Bay City in 1890, rebuilt in 1913, consists of three excellent drawings showing an open-deck, three-mast, steam propeller with a square pilot-house and texas over the forecastle. The boiler and engine were in the stern. This vessel carried as much as 1,163 tons of hard coal from Toledo to Milwaukee and 1,000,000 feet of hemlock from Bayfield, Wisconsin, to Cleveland.

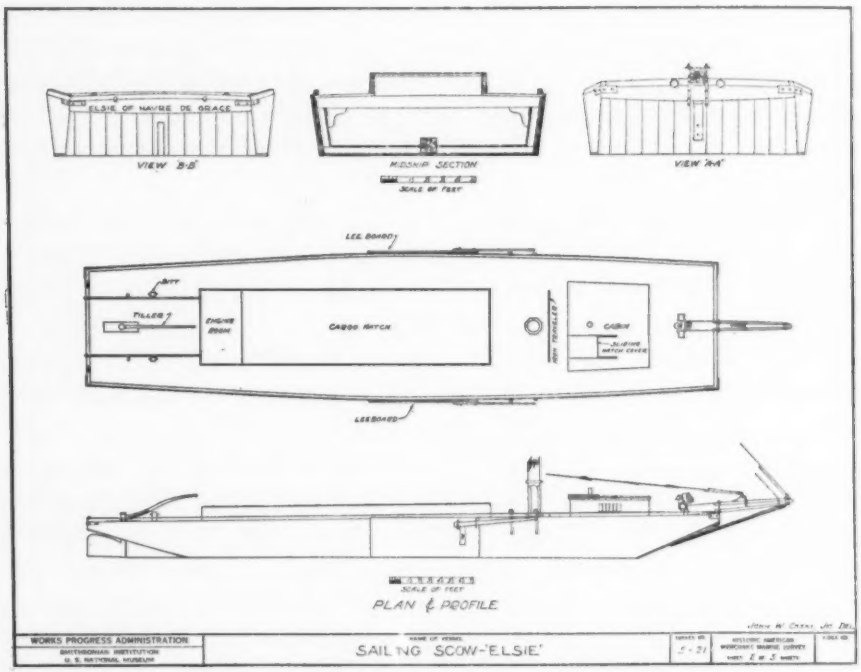
There are about a dozen more passenger and freight steamers in-

cluded, and a variety of other types including fishing tugs; a fire boat, the *Cataract* of 1889; tow boats; the *C. F. Bielman, Jr.* designed and built in 1907, for a marine post office on the Detroit River; the *Flora M. Hill,* 1874, formerly the lighthouse tender *Dahlia,* and the small iron steamer *Shearwater* built in 1909. Four stern-wheel river steamers include the 119-foot yacht *Fortuna,* 1903; the *Portugal Durao* built at Chicago for South America about 1908; a Yukon River steamer; and the *Thomas A. Edison,* 1903. This last was a Florida river steamer designed at Chicago but built in Florida where Mr. Sawyer obtained the half model and an old photograph from the builder. The survey was made from the designer's plans in Chicago where the machinery was built. Photographs of about fifty-five Lakes steamers dating from the eighteen-sixties were received.

West of the Great Lakes the only office of the Survey was located at San Francisco. A well-staffed office, there, under Walter S. Place, produced nearly one hundred surveys of a good variety of vessels. The most complete surveys of large ocean sailing vessels were produced in California. The bark *Emily F. Whitney* built at East Boston in 1880, and still afloat, was made the subject of a survey consisting of thirteen drawings and twenty-eight photographs, old and new. This vessel was operated in succession by J. H. Flitner & Company of Boston, an unidentified British firm, Alexander & Baldwin of San Francisco and finally, as a salmon packer, by the Alaska Packing Company. Another, the bark *Olympic* built at Bath, Maine, in 1892, was a fishing barge at Los Angeles when surveyed. D. W. Dickie of San Francisco in 1910 made measurements and drawings of the ship *Chateaubriant* built at Bordeaux, France, in 1901 and these were available for a survey. Less complete surveys are those of the bark *Newsboy* built at San Francisco in 1882, the *Star of France,* 1877 and the *Hans* built at Port Glasgow in 1921. There are no lines of the last two.

Large West Coast schooners and barkentines built between 1890 and 1917 for the lumber and general cargo trades are well represented. The schooner *Commerce* built at Almeda in 1901 for the lumber trade and the barkentine *Kohala* built at Fairhaven, California, the same year, were available and made good subjects for extensive surveys. The schooner *Newark* built by Mathew Turner at Bernicia in 1887 was surveyed in some detail by Mr. Dickie in 1916 and this information was used for another complete survey. The latest of these is the steam schooner *Edna Christenson* designed by D. W. & R. Z. Dickie and built in 1917. The original plans for this were available. About twelve four- and five-mast

schooners and barkentines including several steam schooners designed and built by Hall Brothers of Seattle, Washington, from 1889 to 1907 were drawn up from the builders' plans. These consist of lines and sail plans of schooners, most of which are about 200 feet in length. An equal number of sail plans for vessels of these types were made, some unidentified.

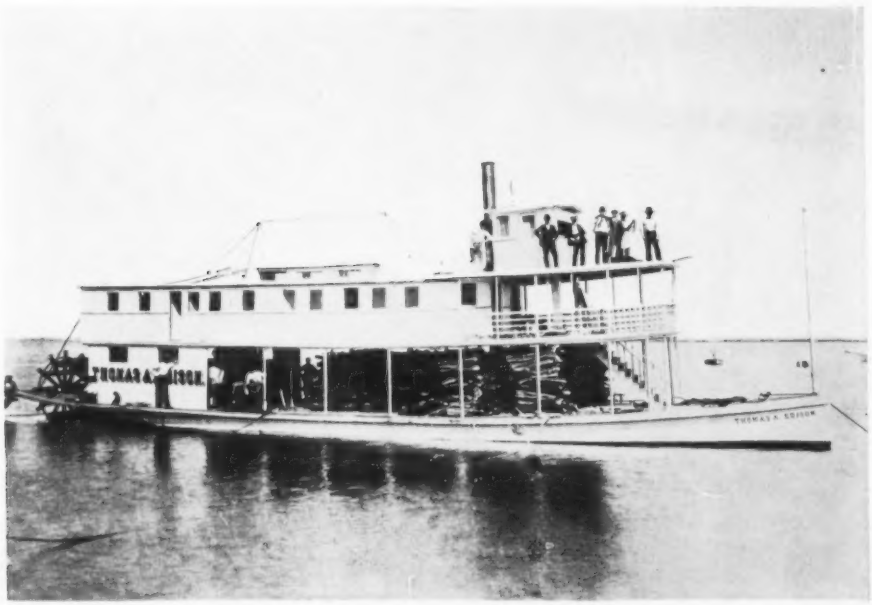


Scow sloop *Elsie*. Built at Philadelphia, 1874
Specimen drawing produced by the Historic American Merchant Marine Survey
Actual size of drawing 17 by 23 inches

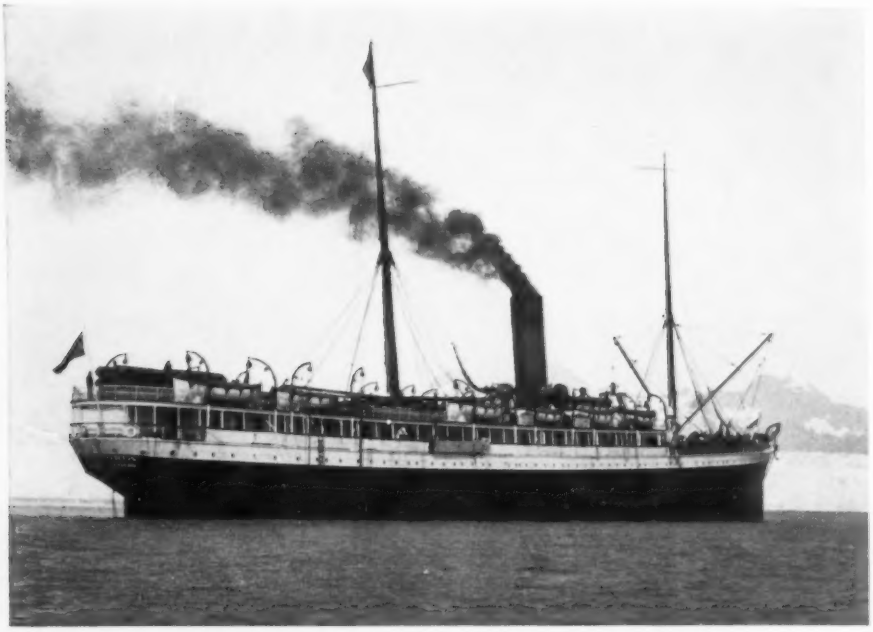
The lumber schooner *Lily* built by Dickie Brothers, at San Francisco in 1882 and rebuilt to represent H.M.S. *Bounty* for the film *Mutiny on the Bounty,* is included. The four-mast tanker schooner *Katharine* built at Belfast, Ireland, in 1887, was surveyed from the builders' plans.

Smaller schooners are well represented by the pilot schooners *Caleb Curtis* built at Boston in 1859, and the still active *Gracie S.* designed and built by James Dickie at San Francisco in 1893; the oyster schooner *Louisa Morrison* built at Coos Bay, Oregon, 1868, surveyed in part from the model at the De Young Museum; and the auxiliary schooners *Atlas* and *Monet*. The *Atlas* built at San Francisco in 1911 was a Philippine Island

Steam schooner *Roosevelt*. Built at Verona (Bucksport), Maine, 1905
Photographed 1936

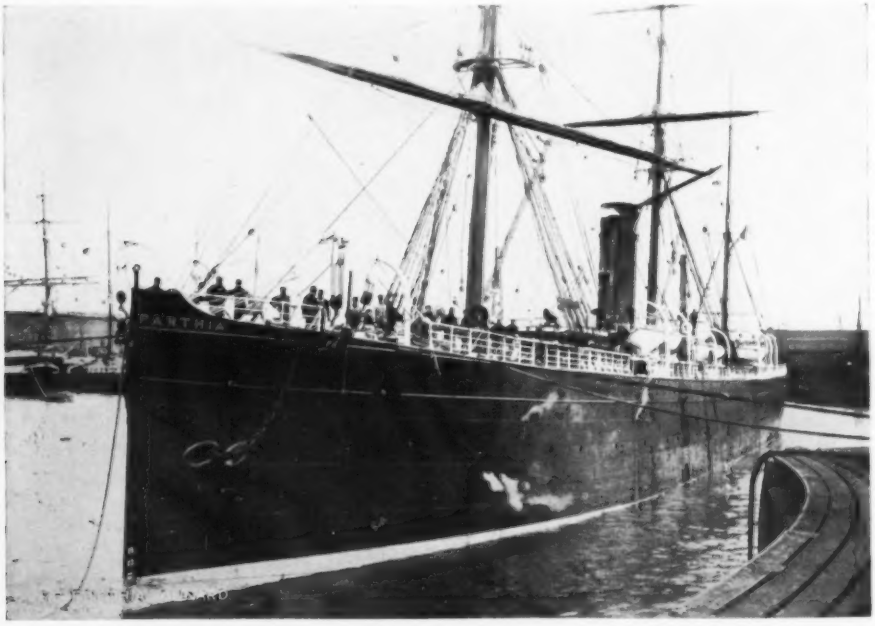


River steamer *Thomas A. Edison*. Built at Apalachicola, Florida, 1901



Steamer *Victoria* (ex *Parthia*) in an Alaskan port

Since this photograph was made an observation room has been added on the boat deck, immediately abaft the mainmast



Steamer *Parthia*, built in 1870 for the Cunard Line

Photograph in F. B. C. Bradlee Collection, Peabody Museum of Salem

trading schooner; the *Monet* built in 1910 was employed as a cargo vessel at Tahiti.

Two famous exploring vessels were surveyed by the California office—the Norwegian-built *Gjoa,* 1872, in which Captain Amundsen made the Northwest Passage in 1903-1906, and the steam schooner *Roosevelt* built at Verona (Bucksport), Maine, 1905, used as a base ship by Admiral Peary in his successful dash to the North Pole in 1908-1909. The *Gjoa* has been preserved at San Francisco. A complete restoration is now in progress. The *Roosevelt* was in active service as a tug until 1937. Both have interesting features of construction required to meet the conditions of Arctic exploration.

Scow schooners have been engaged in carrying cargoes of many kinds in San Francisco Bay for sixty-five to seventy-five years and a number, with power installed, are still in use. About ten were surveyed and with copies of old sail plans and photographs made the subject of a brief but interesting report on the type. What is reputed to be the last of the lateen-rigged feluccas, used by Italian fishermen in the Bay, was also surveyed. Mr. Henry Rusk of the De Young Museum was most helpful in giving advice, encouragement and aid in establishing and operating the San Francisco office.

Altogether the Survey was a fine example of unselfish co-operation on the part of many individuals and organizations of standing in the field of marine research who gave freely of their talents and advice to further the work. They cannot be named here but it is hoped that they are repaid in part by the satisfaction of having contributed to a work that appears to have a lasting and increasing value. They may be assured that their help was appreciated by those who operated the Survey.

The work of the Survey in producing the material has been terminated for several years and it is not contemplated that it will ever be revived. There are however a number of individuals continuing to survey old types of watercraft for their own purposes, some of whom have been doing this work for years. It is hoped that their number will increase and that the work of the Survey will prove of enough merit to induce them to continue to send copies of their surveys to the writer for preservation in the Watercraft Collection. In this way the Survey will prove a good start toward the building of a comprehensive and easily used national collection of accurate drawings of all types of American watercraft.

Notes

THE *VICTORIA*[1]

IN 1940, the steamer *Victoria* (ex *Parthia*) celebrated her seventieth birthday. Undoubtedly the oldest ocean-going steamer in the North Pacific, she is probably also one of the oldest in the world.

An iron, single screw steamer, the *Parthia* was built for the Cunard Line in 1870 by W. Denny and Brothers at Dumbarton. With a gross tonnage of 3,167, her dimensions were: 360.5 ft. x 40.4 ft. x 34.3 ft. She was originally fitted with a compound engine, which was replaced in 1885 with a triple expansion engine, the diameter of whose cylinders were: 31 ins., 50 ins. and 76 ins., with a 54 in. stroke, and which produced 500 horsepower.

After fifteen years of service on the North Atlantic, the *Parthia* was turned over to John Elder and Co. of Govan in 1885 in part payment for the new *Etruria* and *Umbria*. Following her overhaul and re-engining, the steamer was assigned to the Guion Line, but age made her unsuitable for the trans-Atlantic service, and she was sent to the Pacific in the early summer of 1887. Here she operated between Vancouver and Hong Kong in connection with the Canadian Pacific Railway until the advent of the new *Empresses* in 1891. She returned to Great Britain for an overhaul in that year, and was renamed *Victoria* before returning to the Pacific in 1892. Entering the Tacoma-Hong Kong service of the Northern Pacific Steamship Co., she remained on this run until 1904, with the exception of three voyages made to Manila with troops in 1898-1900, and a single voyage to Nome in 1900. In October 1898, the *Victoria* was transferred to United States registry, and in 1901 she was purchased from her British owners by the Northern Pacific Steamship Co., a subsidiary of the Northern Pacific Railway. In 1904, the *Victoria* was sold to the Northwestern Improvement Co., and was extensively rebuilt, her appearance changed by the addition of more deckhouses, in preparation for service between Seattle and Nome, which she took up in the summer of 1904. In 1908, the Northwestern Steamship Co. was merged with the Alaska Steamship Co., and it was by this company that the *Victoria* was operated for the remainder of her active career. A very satisfactory ship, she remained in service until the summer of 1938, when she was laid up in Lake Union, Seattle, where she remained in 1940. The prospect of expensive alterations in crew quarters and for fire precautions in accordance with new governmental requirements seems to have been the determining factor in the withdrawal of this noble old veteran from active service.

JOHN HASKELL KEMBLE

[1] This brief sketch is based chiefly upon various editions of *Lloyd's Register* and W. Kaye Lamb, 'The pioneer days of the trans-Pacific service. 1887-1891,' *British Columbia Historical Quarterly*, I (1937), 143-164. In February 1940, the author visited the *Victoria* where she was laid up in Lake Union. Her fittings had been removed, but ship and engines were intact, and from all appearances, she could have been placed in service with short notice. At the time, she was being offered for sale by the Alaska Steamship Co.

A REVENUE CUTTER DESIGNED BY SAMUEL HUMPHREYS

THE accompanying draught of a 'Revenue Cutter for the North' designed by Samuel Humphreys in May 1829, was drawn from offsets, dimensions and sketches by the designer in the files of the Bureau of Construction and Repair, Navy Department The name of the vessel is not known, but it was apparently built about 1830, together with a similar one entitled a 'Revenue Cutter for the South.'

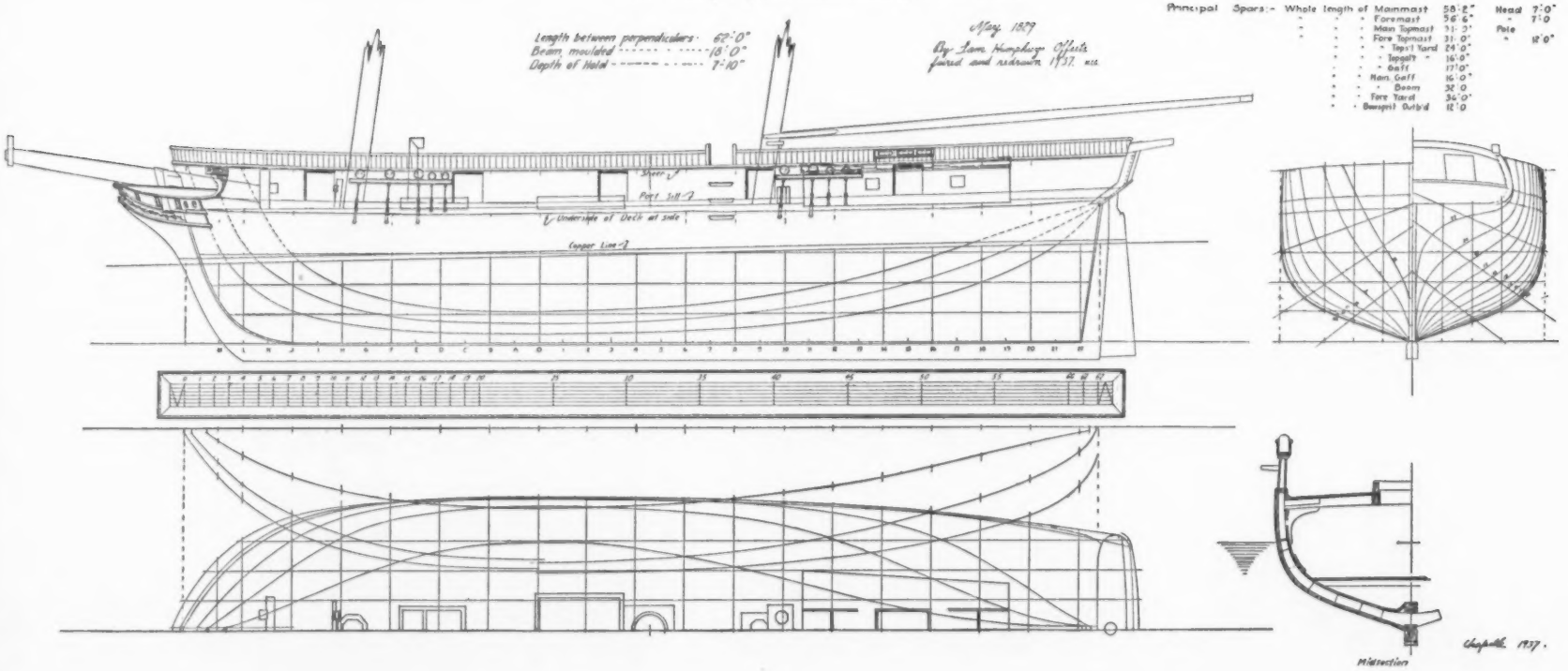
HOWARD I. CHAPELLE

A Draught of a Revenue Cutter for the North

Length between perpendiculars: 62'0"
Beam moulded ..... 18'0"
Depth of Hold ..... 7'10"

May 1879
By Sam. Humphrys Offsets
fared and redrawn 1937. mss.

Principal Spars:- Whole length of Mainmast 58'2" Head 7'0"
" " " Foremast 56'6" " 7'0
" " " Main Topmast 31'3" Pole
" " " Fore Topmast 31'0" " 12'0"
" " " Topsl Yard 24'0"
" " " Topsail " 16'0"
" " " Gaff 17'0"
" " Main Gaff 16'0"
" " Boom 32'0
" " Fore Yard 34'0"
" " Bowsprit Outbrd 12'0



Midsection

Chapelle 1937.

A Figurehead of Talma

In 1857 Captain Samuel Augustus Fabens brought home to Marblehead a life-size figurehead of a Roman warrior in armor (Plate 12), and placed it in the garden of his mother-in-law, Mrs. George Wilson's house in Washington Street. The house was sold in the early nineties, but a few years before that time the figurehead was stolen. Somewhat later it reappeared in another part of Marblehead, and was eventually bought by Mr. William T. Aldrich of Boston, who lent it for some years to the Marblehead Historical Society, and, in 1940, gave it to the Peabody Museum of Salem.

Miss Edith Fabens, daughter of Captain Samuel Augustus Fabens, tells me that in her childhood the figurehead was always called 'Talma.' As none of the family had any particular veneration for the memory of the French actor, François Joseph Talma (1763-1826), and as the Fabens children had only the vaguest idea of who Talma was, it was naturally assumed that the figurehead came from a vessel of that name.

An examination of the prints of Talma in the Theatre Collection of the Harvard College Library makes it clear that the figurehead is a fair portrait of Talma in the role of Nero. The print which is here reproduced (Plate 12), *M. Talma as Nero,* was engraved by J. Thomson, after a painting by Davis, for the *Theatrical Inquisitor,* and was published 1 July 1817 by C. Chapple, Pall Mall, London. The resemblance of the face is striking. The pose of the body and the position of the arms are similar, although the carver has eliminated the wind-catching folds of the cloak. Obviously the carver worked from Thomson's engraving or some similar engraving of Talma as Nero.

On grounds of style, Mr. M. V. Brewington dates the figurehead in the eighteen twenties. The identification of the ship for which it was carved is not easy, for there are two almost equally probable contestants.

A ship *Talma,* 391 tons (110′7″ x 28′2″ x 14′1″), built at New York in 1825 by S. and F. Fickett, was owned by the Holmes Line of New Orleans packets between 1826 and 1833.[1] A copy of the first enrollment issued to this vessel at New York, 16 February 1826, describes the figurehead as 'a man.' This description is not contradictory, but it is not very helpful.[2] A pencil drawing of the ship done by Frédéric Roux (Plate 13) at Havre, probably in the late forties or early fifties, now owned by the Peabody Museum of Salem,[3] shows a figurehead, but so indistinctly that it is impossible to determine the subject.

Another ship *Talma,* 298 tons (109′ x 24′6″ x 12′3″), was built at Medford, Massachusetts, in 1827 by Thatcher Magoun, and first registered at Boston on 14 April 1827.[4] The registers indicate

[1] Robert Greenhalgh Albion, *Square-Riggers on Schedule* (Princeton: Princeton University Press, 1938), pp. 290-291.

[2] A copy of the *Talma's* first enrollment was kindly furnished by Mr. G. W. O'Keefe, Assistant Collector of Customs, New York City. Professor Albion tells me that he has found no description of the *Talma* in his searches through New York newspapers.

[3] A group of seventeen sketches by Frédéric Roux on yellow tracing paper were bought by the Peabody Museum in 1937 from Messrs. Neuville & Vivien, Paris, through the kindness of M. Augustin Normand of Le Havre. The subjects include named American, British, French and Norwegian sailing vessels. The dates of building of eight of these vessels are known, and range from 1825 to 1847. The sketches include other vessels which had disappeared before the publication of the *Bureau Veritas* register for 1857. As the sketches are all of the same size and on the same miserable paper, it is likely that they were executed about the same time, which cannot have been earlier than 1847 or later than 1857.

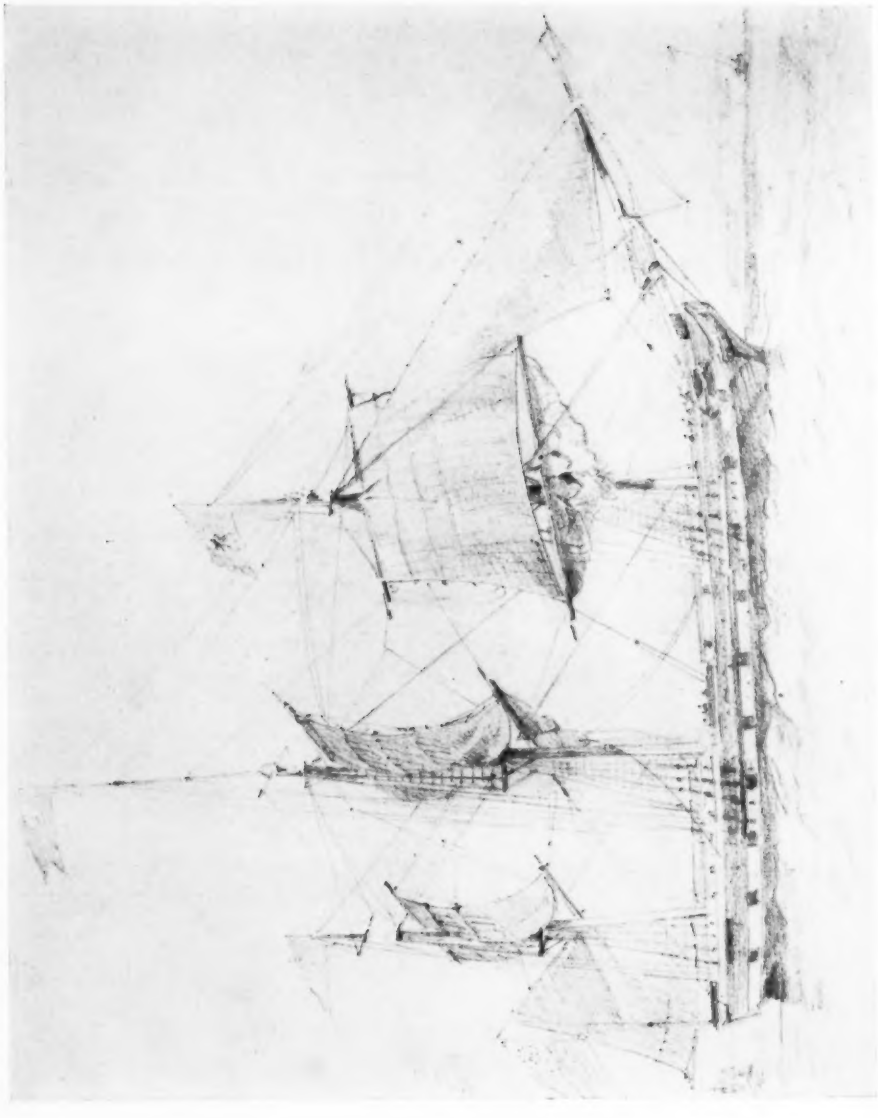
[4] A. R. Baker, *The Ark, Ships and Shipbuilding, with a brief history of the art, and a register of vessels built in Medford* (Boston, 1847), p. 33; Hall Gleason, *Old Ships and Shipbuilding Days of Medford* (West Medford, Mass: privately printed, 1936), p. 58. Mr. J. J. O'Brien of The National Archives Project has given me transcripts of the various registers issued to the *Talma* at Boston.

Figurehead in the Peabody Museum of Salem

François Joseph Talma in the role of Nero

Engraving in the Theatre Collection, Harvard College Library

Figurehead in the Peabody Museum of Salem



Holmes Line packet ship *Talma* of New York
Pencil drawing by Frédéric Roux in the Peabody Museum of Salem

that there was a figurehead, but give no description of it. I have been unable to find any picture of the ship. The ownership of this Medford-built *Talma* changed frequently, for she was registered at Boston on 13 November 1830, 25 April 1833, 6 November 1835, 30 August 1839, 23 July 1840, 13 April 1848, 21 June 1849 and 12 September 1850.

Neither the New York or Boston *Talma* appear in the printed *New York Marine Register* for 1858 nor in the *Bureau Veritas* register for 1857, so both ships were presumably out of circulation by the time Captain Fabens brought his figurehead home.

In the latter part of 1852, Captain Fabens was at Medford superintending the building of the extreme clipper ship *Golden Eagle*, which he later commanded.[5] The ship *Talma* of Boston was not only built at Medford by Thatcher Magoun, but also partially owned by him at various times. Captain Fabens' connections with Medford slightly tip the scales in favor of the figurehead coming from the ship *Talma* of Boston, but there is no positive proof that it did not come from the Holmes Line packet or from some other vessel of the same name that is unknown to me. The Peabody Museum figurehead certainly represents the actor Talma in the role of Nero, and its history from 1857 to 1940 is definitely known. All the rest is conjecture.

WALTER MUIR WHITEHILL

[5] O. T. Howe and F. C. Matthews, *American Clipper Ships, 1833-1858* (Salem: Marine Research Society, 1926), I, 228: Benjamin J. Lindsey, *Old Marblehead Sea Captains* (Marblehead: Marblehead Historical Society, 1915), p. 50.

A Century of Pacific Steamers

The first regular steamship service on the Pacific Ocean was opened by the packets *Chile* and *Peru* of the Pacific Steam Navigation Co. in October 1840. In celebration of this event, Pomona College at Claremont, California, sponsored an exhibition in the galleries on its campus during the month of October 1940. An effort was made to gather pictures which would illustrate the chief stages in development from the pioneer wooden side wheelers of less than 700 tons gross to such ships as the nearly 22,000 ton *President Coolidge*. The materials available made it possible to illustrate steamers of the Pacific coast of North America and of the services from North America to Japan and China most completely, but there were also steamers from the west coast of South America, from the coast of Asia, and from the North America-Australia route shown in the exhibition. Lithographs, photographs and paintings beginning with the *Chile*, and coming down to the present day, some sixty in number, were brought from all parts of the United States and Canada as well as from Asia for the showing.

JOHN HASKELL KEMBLE

The Up to date Method of Getting a Ship Under Way

Place: Pier 19, East River, New York
Time: 1929

The Captain stands on the poop deck with a dim religious light in his eyes. The mates are in their proper places with a proper amount of the same light trickling down their chins. The tow boat is waiting alongside the quarter for the lines to be cast off as it is slack water and the tide will soon begin to ebb. The Captain walks on tiptoe to the break of the poop and invites the crew to meet him half way; that is at the main mast. He then drops a little courtesy and in a lovely voice addresses the men somewhat after this fashion: 'Good morning, gentlemen, I trust you are feeling well and have fully recovered from the fatigue of your last voyage. It is now my duty to proceed to sea, and if it is your pleasure to put on your gloves and take in the lines I shall esteem it a great favor. If any of you gentlemen feel the need of further rest do not hesitate to say so, for we can wait until tomorrow just as well as not.'

Pencil drawing by Frédéric Roux in the Peabody Museum of Salem

This work is finally accomplished and the ship is being towed out by the Battery and Bedloes Island with the Statue of Liberty enlightening the world to starboard. The Captain then remarks '"Blest be the tie that binds" but it is now our duty to untangle things. If it is agreeable to you gentlemen we will assemble on the yards and loose the sails. If any of you feel indisposed you will find malted milk and angel cake served in the cabin. Should anyone feel unable to ascend the rigging under their own steam they will find bosun chairs waiting for them and the idlers and after guard will hoist them to their respective places on the yards.' The topsails are finally sheeted home and the yards mastheaded to the chanty of 'Old Hundred 'Tis of Thee' and 'Abide With Me.' About this time the tow boat is getting ready to leave the ship so that I do not hear any more of the conversation. However, I find myself wondering what happened when the watermelon, ice cream and candy were exhausted. I think I can hear them singing the chanty 'Leave Her Johnnies, Leave Her':

'Oh, here's to the Captain the dirty old brute,
Leave her Johnnies, leave her.
We hope when he dies straight to Hell he may shoot,
It's time for us to leave her.'

WILLIAM B. STURTEVANT

Documents

Donald McKay to John W. Griffiths
[Griffiths Collection in United States National Museum, Washington, D. C.]

East Boston, Aug 15/59

JOHN W. GRIFFITHS, ESQ.
PHILADELPHIA, PA.

Dear Sir.

As you are extensively known abroad among all the Scientific Departments, particularly in Naval Architecture,[1] and as I intend visiting Europe and all the Navy Departments therein, soon, therefore I would ask of you an introductory letter, (stating I am an American Shipbuilder, also my standing at home), to any of your friends you may see fit, & a general letter if you choose. Mr. Maury[2] has given me a certificate that the ships of my build have attained a speed, higher than those of any other builder in the world. I have built in all 88 ships, mostly large size 3 Deckers, and not one up to this date has ever sprung a leak at sea,—or abandoned at sea,—or in a foreign port under repairs,—or made a port short of her destination,—excepting the "Great Republic," which shipped a sea off Cape Horn, & broke in decks, (this circumstance I suppose you know about). Capt. Limeburner says the ship has not made water enough to equal ½ that drank by the crew, & is perfectly tight when drawing 26 ft. I want to get a letter from Com. Chas. Stuart.[3] Enclosed please find a few lines for him, also a copy of a letter from Mr. Cass to Mr. Dallas. Will you give him both for me. I have been to Washington, & returned this A M and I came right straight through for business called me.

Will you give your earliest attention to the above & Oblige

Yours respectfully, DONALD MC KAY

Contributed by Frank A. Taylor.

Jeremiah Thompson to William Thompson[4]
[Thompson Papers in a private collection]

Newyork 12mo 14. 1822.

Dear Brother.—

An opinion has been entertained by many that the Liverpool Packets[5] in which I am pretty deeply interested have been a losing Concern:— and I understand this opinion has prevailed in England as well as in this country. We[6] have not been at all anxious to contradict Such a sentiment, as we ourselves knew what the State of the Case really was; and we also knew that the gain or loss, what ever it might be was nobody's business but our own. As thou may perhaps be taking of a similar opinion, and as I should be unwilling that so near a Relation should be under a wrong impression with respect to it, I will state to thee confidentially the actual result of the undertaking.

Thou wilt probably be surprised to learn that we have never had a single Voyage that has terminated on the

[1] John Willis Griffiths was one of the leading American ship designers of the pre-clipper and clipper periods. His books on ship design and construction were published in England as well as in the United States.

[2] Lieutenant Matthew F. Maury, U.S.N., pioneer oceanographer. See Richard C. McKay, *Some Famous Sailing Ships and Their Builder Donald McKay* (New York: Putnam, 1928), p. 354.

[3] The other persons mentioned were: Charles B. Stuart (1814-1881), Engineer-in-chief USN 1850-1853, author of *The Naval and Mail Steamers of the United States* (2nd ed., New York, 1852) and *The Naval Drydocks of the United States* (New York, 1852).

[4] Jeremiah Thompson, an English born Quaker, was a textile importer and merchant living in New York. He seems to have been the leader in the organization of the first transatlantic packet service. William, his brother, also a textile merchant, lived in England.

[5] The Black Ball Line, organized 1818.

[6] Jeremiah Thompson, his uncle Francis Thompson, Benjamin Marshall, Isaac Wright and his son William, all of New York, were the original partners in the formation of the Black Ball Line.

wrong side except one — this was one of the Voyages of the *Courier,* Capt Eldredge, and it only brought us in debt about $500. This fact is a striking proof of the general safety & certainty of the Business.

It appears that the Vessels in which I am concerned with Wright & Son, Uncle Francis & B. Marshall made in all 61 voyages up to the beginning of our *Double* Line[7] in 3rd Month last. 9 of these Voyages were made previous to the regular Packets & 52 of them as Packets in the original *Single* Line.

These 61 Voyages cleared us the sum of $173.483 being an average of $2844 to each Voyage. My share of this Profit was $32.089. Part of the time I owned 1/6th part 1/5 and now I own 3/10th.

Different Voyages have of course left very different profits; but as mentioned above they every one left some profit, except the solitary case mentioned.

The most freight & passage money that was ever made *outward* in any one instance was by the *James Monroe* in 5th Mo 1818 — say £1174 Stg.

The most freight & passage money that was ever made *homewards* in any one instance was by the *Columbia* James Cropper in 6th Mo 1822. — say £1365.

The most freight and passage money that ever was made on the *Same Voyage* both outward & homeward was by the *Columbia* in 1st mo 1822 — say £1070 outwards and £1327 homeward.

The *William Thompson* came very near being the highest on her Voyage from here in 6th Mo last as she made in freight & passage Money outward £1050 and homewards £1312. She had three Passengers less than the *Columbia.*

I ought to have mentioned to thee that by passage money I mean £15 each passenger, which is paid to us by the Captains. They used to pay us £17 each. The Captains find them every thing.

The most profitable Voyage that we ever had was by the *Pacific* in the Summer of 1818. She left a nett profit that voyage of $7065. Her freights were not the largest as has been mentioned above, but her expenses happened to be very small.

The most *un*profitable one was by the *Courier* as already mentioned.

I find the average of the 61 Voyages was as follows:

Freight outwards	£550–
do homewards	650–
Passages out 13 a £17	221–
do home the same	221–
	1642
Expenses	1002
	£ 640 profit

each voyage being $2844.

We now own in this establishment of the Double Line, eight Packets: the *Amity, James Monroe, Nestor, Columbia, James Cropper, William Thompson, New York* and *Orbit:* and my share of the *Cost* of these eight ships (3/10ths) after deducting the Proceeds of the *Pacific, Courier, Albion,* & *Liverpool* and adding all Insurances & other incidental Charges amounts to the Sum of $77.000 we are now building a new one, the *Canada;* & if she costs $33.000 and if we can sell the *James Monroe* for $13.000, my share of the difference would be $6000. which, if added to the above $77.000 would make my share of the Cost of the eight Packets $83.000.

Now it appears that up to the end of the *single* line my share of the Profits was $32.000, which left me out of Pocket $51.000.

But if they continue to average as well for us as they have done, say $2844 each Voyage, the said $51.000 would be paid off in 60 Voyages: say my share $852 each Voyage.

[7] The Line originally owned four vessels, one of which sailed from New York and one from Liverpool on the fifth day of each month. Because of competition, the number of vessels was increased to eight in March 1822 with two sailings each way each month, the Double Line.

This will require but a short period as they now make 24 Voyages a year. They commenced with the *Amity* in 3rd Month last; so after taking out of the account the *Albion* & *Liverpool,* there will be 17 Voyages this year.

This leaves 43 Voyages to be made after this year; and will of course require to the 1st of 10th month 1824. But as the Cost may perhaps be a little further increased by the exchange of the *Amity* & *Nestor* for newer ships, I may allow them the whole of 1824 to completely clear themselves.

Perhaps it may be thought that as the Number of Lines of Packets is lately increased, ours will not do so well as they have done. I think however that they will; as the increased size of our ships will make up for any falling off there may be in Passengers or in goods from Liverpool.

The Accounts of only 7 Voyages of the Double Line have yet been made up & they average a Profit of a little over $2500 each. This is less than the average of the single Line, but these 7 voyages were very expensive ones in chain Cables, New Cabins &c The next account in succession will probably be a very good one; & I think come very near making the whole 8 average $2800 each.

So that upon the whole I think I have no reason to regret my Concern in these ships; but that on the Contrary the prospects of profit by them is very favorable.

I must now request that thou wilt not disclose the information which I have so fully communicated: I should not like any of the statements to obtain publically. As thou art not a ship owner I feel no hesitation in mentioning them to thee; but I should not like others to be so particularly acquainted with them.

My other ships, transient ones I mean, such as the *Orozibo* &c are also doing well for me & will not I hope come much behind the pkts.

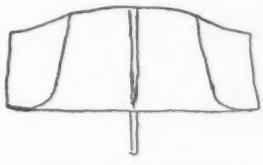
Thine very affect

JE THOMPSON

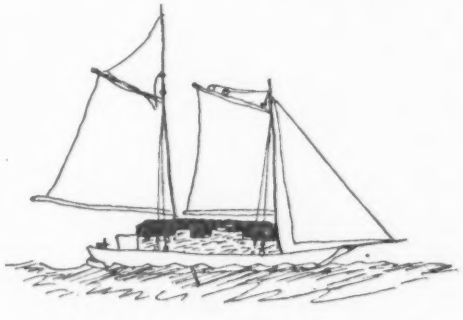
Contributed by M. V. Brewington.

Henry Hall's Notes on the San Francisco Bay Scow Schooner

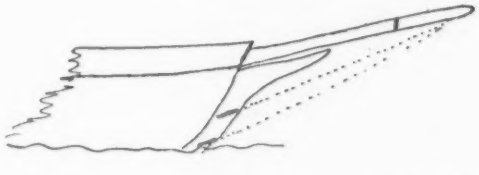
The *Report on the Ship-building Industry of the United States* by Henry Hall, published in the eighth volume of the *Tenth Census of the United States*—



1880 (Washington, 1884), is a fundamental document in the history of American shipbuilding. In 1939 two notebooks used by Henry Hall while collecting material for his *Report* were offered for sale in Boston, and were



bought by Mr. Stephen Phillips of Salem, who gave them to the Penobscot Marine Museum, Searsport, Maine. The first of these (7½" x 9½", 506 pages partially filled) is entitled *Ship Building in the United States,* and was begun at Alexandria, Virginia, 11 June 1881. The



second (8½" x 13⅜", 568 pages partially filled) is entitled *Models and Measurements,* and was begun at New York City, 24 March 1883. The later volume con-

sists chiefly of fairly familiar information about McKay and Webb vessels, but the earlier volume contains invaluable descriptions of types of local craft in Virginia, on the Great Lakes, the western rivers, and the Pacific coast, and is illustrated by pen-and-ink sketches.

Henry Hall's notes and sketches of the San Francisco Bay Scow Schooner (*Ship Building in the United States*, pp. 236-237) are printed herewith, and it is proposed to include similar extracts from his notebooks in future issues of THE AMERICAN NEPTUNE.

Henry Hall was born at Auburn, New York, on 6 December 1845, the son of Benjamin Franklin Hall (chief justice of Colorado, 1861-1863) and Abbe Farnam (Hagaman) Hall. According to *Who's Who in America*, XI (1920-1921), 1201, he was city editor of *Auburn News* and *Auburn Advertiser*; an editor of *Norwich* (Connecticut) *Daily Bulletin*, 1873-1875; in the editorial department of the *New York Tribune*, 1875-1881, and business manager of that newspaper from 1882 to 1901. He married Sarah Virginia, daughter of L. Warren Houghton of Bath, Maine, 2 February 1886. At the time of Henry Hall's death, 6 February 1920, he was described as a 'financial writer,' with an office at 52 Broadway, New York City, and home at Bronxville.

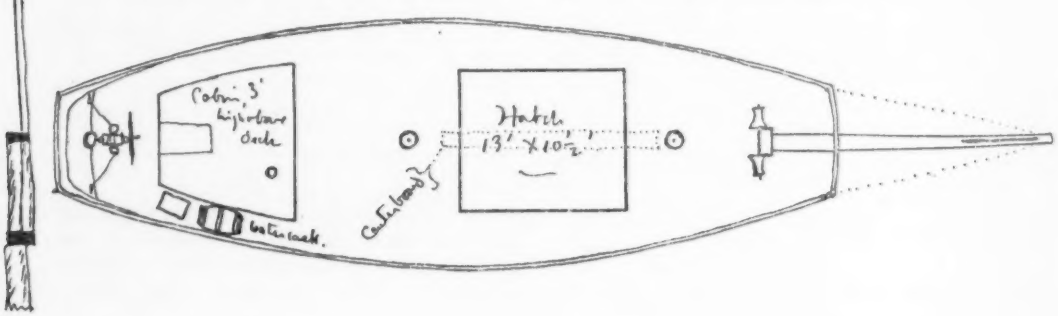
S[an]. F[rancisco].

Dec. 27, '81.

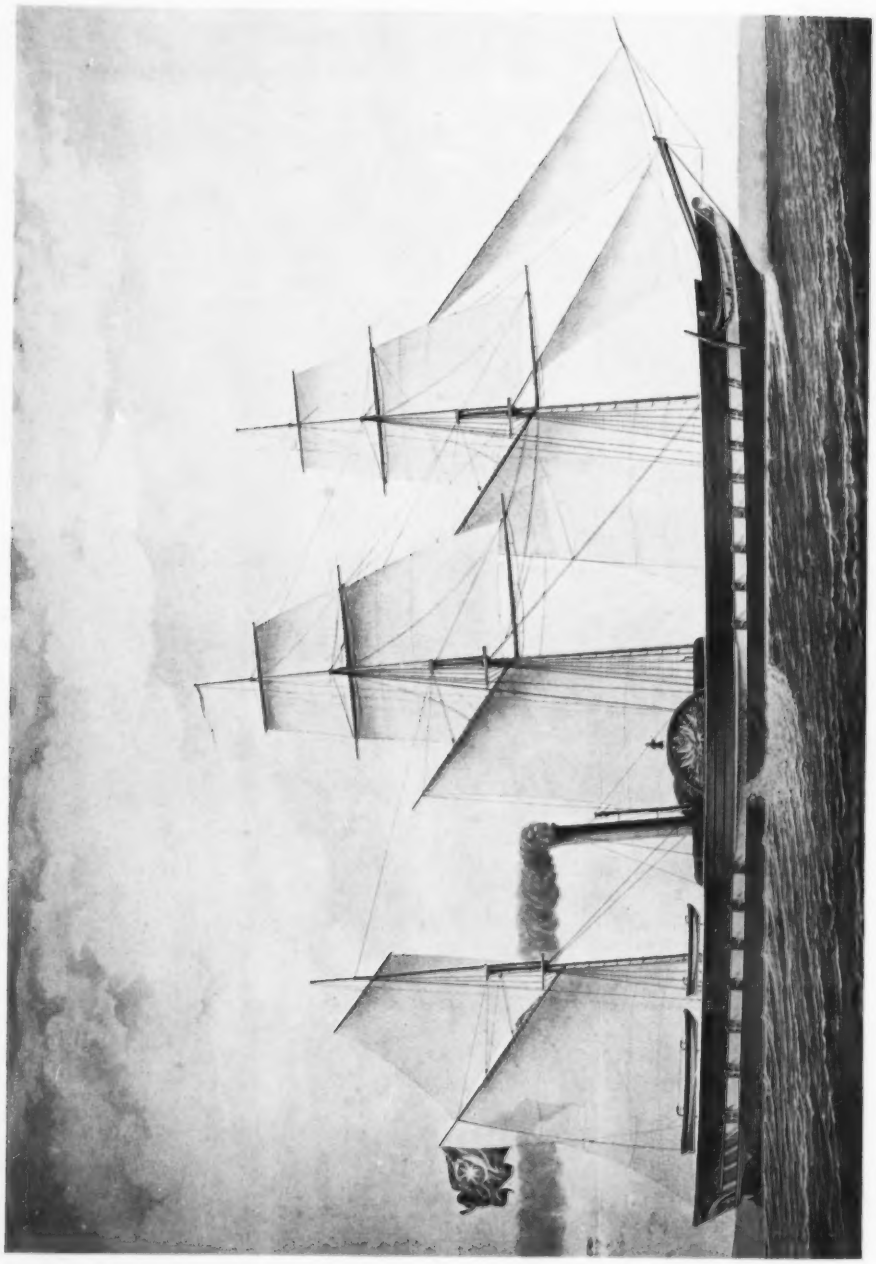
A large number of scow schooners are employed in the bay and on the Sacramento river and its tributaries, in freighting brick, hay, grain bags, and produce. At the brick wharf in S. F. nearly 30 of these little schooners can be seen almost every day, unloading. They are from 40 to 50 feet long, 2 masters, carrying 3 men to work them. Their load is generally carried on deck. They are handy and pretty smart. The *Alaska* carries 23,000 brick in a cargo = 57½ tons. The *War Eagle* carries 28,000, or 70 tons. One of these schooners carries 30,000 brick, equal to 75 tons weight. The average cargo is from 25,000 to 30,000. 2½ tons to the thousand brick. The brick is piled between the after house and the foremast, a square space being left in front of the mainmast, so as to give access to the center board. Sometimes 2000 brick or so are put in the hold; rarely, however. Broad cutwaters and shags. Framed boats.

The *War Eagle* is 58′ 3″ (on deck) x 20′ x 5′ hold, or perhaps 6′. Bulwark 18″ high amidships, rising to 24″ at the ends. At the bow it is perpendicular, but at the stern, it rakes sharply aft. Chock at stern, 5″ x 6″. Bowsprit 18′ outboard. Boom to jib 32′. Two chains from bowsprit, down to cutwater. One stay from top of foremast. Two shrouds. Masts 75′ x 14″; topmast on mainmast only, 28′. Fore boom and gaff 20′ and 18′. Main boom 38′; gaff 20′. Register measurement 33 tons.

Contributed by Lincoln Colcord.



Ship *John Currier* (built at Newburyport 1882: wrecked at Nelson's Lagoon, Alaska, 1907) in San Francisco Bay.
Reproduced from a photograph owned by Edward Strong Clark



Turkish Steam Warship
Water-color owned by L. W. Jenkins

Queries

Turkish Steam Warship

Information is desired as to the possible name of the steam warship figured in the accompanying illustration. The original was purchased from a Boston dealer some twenty years ago. It is a water color drawing, 20.5 inches by 31.5 inches, and is supposed to be one of a number of warships built in England for the Turkish Government.

L. W. JENKINS

Columbian Cooperage

Can anyone give me information about the pipes, casks and barrels used for wine and water aboard ship in Columbus's day?

1. I have been assuming that all cooperage of that period was hooped with some sort of twisted withes, not iron; but a passage in Columbus's Journal for 8 January 1493 makes me wonder. He had sent *Niña's* boat up the Rio Yaque, Hispaniola, to fill the water casks, and says that 'returning to the caravel they found bits of gold adhering to the barrel-hoops (*aros*), and the same on the pipe-hoops (*aros de la pipa*)? Would it not be iron hoops that picked up gold from a sandy river bed?

2. On his Third Voyage in July 1498 Columbus was becalmed in the doldrums at about lat. 10° N, long. 28° 40′ W; and it was so hot, he says, that 'nobody dared to go below to look after the casks of wine and water which swelled, bursting the hoops of the pipes.' Is this possible? Could, for instance, the heat have started a secondary fermentation in the new wine, so that, if nobody went below and started the bungs, the pipes swelled and burst the hoops? But, in that case, must not the hoops have been of wood, not iron? And would casks of water have swelled in the heat?

3. A manuscript in the Library of Congress, commonly called the *Sneyd Codex*, describes a voyage in the Caribbean some time in the 1490's. It says that they suffered intense heat somewhere SSE of Hispaniola, and 'the water ran low in the barrels and the hoops burst.' Is that possible? It seems to me that the effect of heat on a half-empty barrel would be to shrink the staves and loosen the hoops rather than burst them. But I have no experience of what happens to water and rum casks in the tropics, and crave advice from those who have.

S. E. MORISON

Cooking for the Conquistadors

Who did the cooking aboard ship in the great days of discovery?

We have a full list of ratings for two of Columbus's Voyages and for three ships on another. He carried coopers, caulkers, 'chips,' and even painters, but there is no mention of a cook. So on Magellan's voyage. Was the cooking done by the *grumetes*, ship's boys, or did each seaman roll his own?

S. E. MORISON

Northwest Passage. In 1753 a Newburyport built schooner, the *Argo*, owned by a number of Philadelphians, New Yorkers, and Bostonians sailed from Philadelphia in an attempt to discover a Northwest Passage. On the way North she put into Hyannis and probably Portsmouth. On her return she first entered at Boston and later proceeded to Philadelphia. In the following year the attempt was repeated. Can any reader aid me in finding data as to the identity of the owners and the events of the voyages?

M. V. BREWINGTON

THREE-MASTED SCHOONERS. When was the three-masted schooner rig first introduced into the American merchant marine? What early examples are known?

V. M. W.

CAPTAIN SANDS' LOCUST TREE

CAPTAIN JOHN SANDS (1649-1712) sailed a coastwise vessel between Block Island, Long Island, New York City and Chesapeake Bay points in the years 1680 to 1712. During this time (reputedly in 1683) he found in Maryland or Virginia a valuable form of black locust tree (shipmast locust, a variety of *Robinia pseudoacacia*) and introduced it on Long Island. The Soil Conservation Service of the United States Department of Agriculture wishes to know where Captain Sands obtained this tree. Any record of his voyages which mentions the Chesapeake Bay ports that he visited would be of assistance.

S. B. DETWILER

CLUMP-BUILT. What is the meaning of the word 'clump' as applied to a vessel; such as, 'a clump-built schooner' or 'a Clump brigantine'?

H. J.

STEERING-WHEELS

ROMOLA and R. C. Anderson, *The Sailing Ship* (New York: Robert M. McBride & Company, 1926), p. 168, state that it is impossible to ascribe the invention of the steering-wheel to a definite date or country, but gives evidence of its use in English vessels in the first decade of the eighteenth century. Have any earlier instances of the use of the steering-wheel been found? What is the earliest use of the steering-wheel in this country?

W. M. WHITEHILL

HAMPTON — HAMPDEN BOAT

WHAT is the origin of the name of the 'Hampton boat,' described on pages 66-67 of this issue? H. I. Chapelle, 'The Hampden Boats,' *Yachting*, LIX (1938), 40 ff., uses the spelling 'Hampden,' but states: 'I am unable to discover where the name "Hampden" came from; there is no town on the bay [Casco Bay] by this name though there is a Hampden near Bangor, in the Penobscot valley. There seems to be no tradition as to the source of the name on Casco Bay.' Colonel Stiles, who owned one of the boats in 1897, uses the spelling 'Hampton' (p. 67). Is it possible that the name is derived from Hampton, New Hampshire?

W. M. WHITEHILL

CHRISTOPHER GORE

I should like to know whether Christopher Gore was involved in maritime activity in any New England ports between 1790-1827, either as part owner of a vessel or as investor in cargo.

HELEN REISINGER

HENRY HALL

THE Editors would welcome any biographical information about Henry Hall (1845-1920) that would supplement the brief account of his life on page 87 of this issue.

Book Reviews

PROGRESS in maritime research and publication to date has been seriously handicapped by the chaotic state of the literature. There has hitherto been no centralized agency for the systematic and critical examination and evaluation of new books, for the location and description of older classics, and for the collection and dissemination of bibliographic data of maritime significance appearing in current periodical literature.

In establishing the bibliographic section of *The American Neptune*, the editors have projected several diversified activities which may be outlined under three general headings as follows:

1. Book reviews
   a. Full reviews
   b. Shorter notices
   c. Critical title listings
2. Older maritime classics
3. Bibliographies of recent periodical articles

The book review section will feature reviews by competent critics of outstanding maritime books as they appear. No definite space limit has been placed on the length of these reviews; however, it is expected that they will average about 800 words. The reviewer will be given wide latitude in arranging his own treatment of a significant work. Space will not permit full reviews of all of the important books following within a particular quarter. Many studies of less universal interest perhaps dealing with local affairs, problems, or history will be accorded shorter notices of from 200 to 300 words. These shorter notices will be principally factual. However, critical comments will be included. In the interests of completeness, many general or very highly specialized studies will be given a title listing. This will include the name of the author, the title, place and date of publication, the publisher, price, size, and number of pages, together with a brief one- or two-line critical comment intended to give readers an idea of the scope and content of the work.

It is the desire of the Editors to co-operate fully with publishers in reviewing or listing all new books of maritime interest. Arrangements in several instances have been made to secure announcements and review copies. Any publisher may feel free to submit announcements or review copies to the editors. The right of criticism, however, is strictly reserved and each study will be treated impartially on its merits.

There are many older books of basic importance which may be considered maritime classics. As contemporary sources for nautical information, they are of primary importance. However, in many cases, these sources are not generally known—in some cases because of their rarity, or in others because they appear in foreign languages and translations into English may never have been made. From time to time the Editors hope to include a critical discussion of one or more of these classics giving the location of copies and giving as complete information as space may permit on the particular work. Suggestions of desirable titles to be included in this section will be welcome.

Each year an increasing amount of valuable and highly fugitive material appears in the publications of historical and related sources, house organs, professional journals, etc. In many cases, these articles are not readily accessible to specialists who do not have access to exhaustive periodical files. Accordingly, an attempt will be made to include bibliographical data on articles of maritime interest appearing in the periodical literature. Again, readers are urged to submit for inclusion references to articles which are important or interesting.

An attempt will be made by the Editors and the Editorial Advisory Board to answer specific questions on bibliographical matters, although obviously exhaustive bibliographical work will not be possible. Similarly, information on the possibility of securing facsimile duplicates in the form of photostats or microfilm copies of very rare materials will be furnished.

LAWRENCE A. HARPER, *The English Navigation Laws: A Seventeenth-Century Experiment in Social Engineering* (New York: Columbia University Press, 1939). 6" x 9", cloth. 503 pages. $3.75.

Judging from the history textbooks, the English Navigation Acts always seemed a fairly simple matter. One got the general impression that for two centuries most of England's trade had to be carried in 'English ships with English crews.' On the American side, one might recall that Virginia tobacco and other 'enumerated' articles could be sold only in England — a grievance that helped to bring on the American Revolution.

No one will retain any illusions about the simplicity of the navigation laws after reading this very substantial and significant study by Professor Harper of the University of California. The basic acts of 1651 and 1660 were only beginnings; the appendix lists some 333 different acts of Parliament which modified them before the final repeal in 1849. In his valiant effort to cut a path through this maze of changing regulations, Dr. Harper accumulated 200 pounds of copied notes and 15,000 photographed pages, in the course of delving into official records and hundreds of secondary works. Not one historian in a hundred would have had the courage or the perseverance for such a task, and the world of scholarship is richer for this stout book bristling with footnotes. It does not sparkle, but it certainly carries authority.

The author was primarily interested in the navigation laws as a governmental effort to regulate the national economy in the best interests of England, a product of the age of mercantilism which finally gave way to free trade in the nineteenth century. The first part deals with the origin of the laws, while the second part discusses their enforcement in England. Matters come closer home in the third part with the treatment of enforcement in the colonies. Readers of this journal are apt to find the fourth part most interesting, for it takes up the trade with Asia, Africa, and America, the trade with Europe and the Levant, and finally, ships and seamen.

There is more of commerce than of navigation in the volume and the portion devoted to the American colonies is not extensive. In his consideration of ships and seamen in Chapter XXII, however, Dr. Harper has gathered some useful statistics from elusive sources and has presented some useful discussions of cost of construction and availability of shipbuilding material. It will be remembered that American colonial vessels enjoyed most of the full privileges of English registry and that Scotland in 1707 gave up its independence to secure advantages similar to those enjoyed by the colonists over here. Another item of interest to American readers is the adjustment of the navigation laws to meet the situation created by our independence, particularly in the West Indian trade.

As suggested above, the book is not light reading. The work is so thorough, however, and the scholarship so sound that anyone who is writing on British commerce or shipping, or certain aspects of American maritime activity, during those two centuries should not fail to consult it, lest he be drawn into too easy generalizations about an extremely complex subject. The extensive bibliography, moreover, contains a wealth of helpful suggestions.

ROBERT G. ALBION

JOHN PHILIPS CRANWELL AND WILLIAM BOWERS CRANE, *Men of Marque: A History of Private Armed Vessels out of Baltimore During the War of 1812* (New York: W. W. Norton & Co., 1940). 6⅛" x 9⅜", cloth. 427 pages, 14 illustrations. $3.75

In no war in which our country has been engaged have the unofficial forces played so large a part as in the War of 1812. Ashore the army and militia, except in two engagements, showed clearly that a poorly trained army of citizens was worthless; afloat our small but well-trained navy distinguished itself whenever it was able to slip to sea past the British blockade.

But by itself the official naval force was unable to decisively defeat the Royal Navy, and it was only through the unofficial forces, the privateers and letters of marque, who prayed on British commerce on both sides of the Atlantic, that an insistent clamor to stop the war was raised in England by the mercantile interests.

Exceeding any other port in this business — and a business it was considered by contemporaries — was Baltimore. Here all the necessary factors for its success came to a focus: vessels, the fastest of the continent; commanders, as cunning and gallant as any; and merchant-speculators, perhaps shrewder and more daring than those of other seaports. In three years from the city's wharfs there sailed 126 vessels all intent on taking British prizes. Their record of success was phenomenal — 556 known prizes.

First tracing the background, Messrs. Cranwell and Crane have written a carefully documented history of Baltimore's private-armed vessels from its very inception to its final days. They have unearthed a wealth of illustrative material from the papers of the owners; from logs written by officers; from contemporary newspapers accounts of cruises and engagements as they were reported by participants and eye witnesses; and from the records of both the British and American Admiralty Courts.

The authors have given consideration to the type of vessels Baltimore thought best for letters of marque. They have described in detail the methods of obtaining commissions, manning the ships, and the very important question of profits and losses has been treated. Biographies of both the successful and the unfortunate vessels are included to give us an insight into all the active phases of the business. We are introduced to some of the great privateersmen, such as Joshua Barney, Thomas Boyle (he who 'blockaded' the British Isles single handed), John Gavet, Edward Veasey, and others, many of whom are worthy of more extended acquaintance. Almost as if we were beside them on the quarterdecks we see them cut deep laden merchantmen out of convoys, engage His British Majesty's mail packets, fight off the boat attacks of the Royal Navy, and sometimes we are captured ourselves when a frigate or ship of the line outsailed our brig or schooner.

A series of Appendices gives in compact form a list of the Baltimore private-armed vessels, dates of cruises, captures, and fate; a list of masters and the vessels each commanded; and a list of owners and the vessels in which each shared. There is an excellent index, and a detailed bibliography. In the latter there are two omissions of some importance: the records of the Vice-Admiralty Court at Halifax published by The Essex Institute in 1911 under the title *American Vessels Captured by the British During . . . the War of 1812* which includes several Baltimore vessels and a number of their prizes; and a sizeable fragment of Joshua Barney's log of the *Rossie* owned by the Historical Society of Pennsylvania.

The book itself is in keeping with the quality of the text, a beautifully designed and executed piece of work, well illustrated with portraits of men and vessels and with reproductions of documents and charts.

M. V. BREWINGTON

[CARL C. CUTLER, ED.], *Captain Charles Hervey Townshend: Self-Portrait of an American Packet Ship Sailor* (Mystic, Conn.: Marine Historical Association, Inc., 1940). 7″ x 10″, wrappers. 86 pages + IV Appendices, 8 plates. Vol. II, no. 1 of *Publications of The Marine Historical Association, Inc.*: printed for distribution to members of the Association.

Although Captain Charles Townshend died as recently as 1904 this story of his life, chiefly taken from his Journal and letters, seems today like the story of another world. Here is vivid first-hand material both for the student of our maritime history and for the student of our social *mores*. The Marine Historical Association deserves our thanks for putting this record in print.

Charles Townshend, one of nine children, was born in New Haven, in 1833, of respectable, substantial parents. Like so many sailors he began his seafaring early, at fifteen, and contrary to parental wishes, but his constantly re-iterated determination 'to be somebody or nobody' soon won them over to a position of unswerving, loyal encouragement, and a profound belief in his abilities. Charles rewarded his parents rapidly; at seventeen he was third officer of the London packet *Southampton*, at twenty, second mate of the Havre packet *Helvetia*, the next year first officer of the *Germania* and at only twenty-three he attained command of the packet ship *Bavaria* — one of the youngest Western ocean packet captains on record. Later when sail began to decline he shifted to steam succeeding Bully Samuels in command of the *Fulton*. His last voyage was in 1870 when he successfully delivered the *Ontario's* two and a half million dollar cargo of arms to the French. On shore, he became one of New Haven's outstanding citizens, was an important pioneer in oyster culture, and wrote numerous historical books and articles.

Perhaps a clue to his rapid rise and the universal esteem in which he was held by owners may be found in a letter he wrote to his mother in 1850 when he was seventeen, 'I read the Bible three or four times a week . . . I never sware and I try to keep the Sabbath . . . I never go on shore with them (the sailors) . . . I never drink . . . I am not afraid of any man.' And through the years his mother and his brothers responded in kind, writing him letters filled with affectionate, useful precept and radiating faith both in God and in the family name. This is not to say there is any lack of fact and excitement in these pages but to quote Carl C. Cutler in the Preface, 'What is more important they reveal with persuasive clarity the family influences, the social, religious and business environment of the man and the times, in the very process of moulding the young sailor's character and shaping his career.'

The volume is legibly printed, ably edited and supplied with useful appendices. The illustrations are excellent but it is to be regretted that no information is given regarding the artist, date of execution and present location of the paintings reproduced.

ALFRED W. PAINE

ALEXANDER CROSBY BROWN, *The Old Bay Line* (Richmond, Va.: The Dietz Press, 1940). 7½" x 10½", cloth. xxiii + 176 pages, 58 illustrations and end-paper map. Copyright, The Baltimore Steam Packet Co. $2.50.

In 1865, the 25-year-old Baltimore Steam Packet Company – operating between Baltimore and Norfolk – advertised as 'The Old Established Bay Line.' It has been The Old Bay Line ever since and now in its centennial year is the oldest active steamboat company in the United States. In spite of railroads, automobiles, trucks, buses, and airplanes, its stevedores truck freight aboard the daily steamers by the hour and a lively lot of passengers still find steamboating a good way to travel.

Alexander Brown who is Corresponding Secretary of the Mariners' Museum at Newport News, has written a straightforward history of the Line. To set the scene, he has invented a traveler of 1840 and his trip aboard one of the Line's first steamboats, the *Georgia*. He then traces the quick rise of the steamboat on the Bay from the locally built *Chesapeake* of 1813 through the period of the Maryland and Virginia Steamboat Company which in 1828 combined all of the lines operating on the Baltimore-Norfolk run. This company was succeeded by the Baltimore Steam Packet Company. In these chapters Mr. Brown describes the early scheme of transportation in the East where the rapid communication between tidewater cities was carried out over long inland water passages connected by short overland hauls by coach or rail. The importance in such a system of the Chesapeake's conveniently located, 250-mile water course, made it a natural place for the successful operation of steamboats.

The history of the Old Bay Line, itself, is presented as the story of the acquisition, operation and disposition of its vessels. Their story is filled out with the details of the Company's contests and compromises with competitors, its affiliations with railroads, and the service records of the Company's officials and the officers of its boats. For this material Mr. Brown had access to the remaining records of the Company and the cooperation of its personnel. His book has the authority and viewpoint of an official history. The introduction by the president of the Line and the photographs of the officers give it the appearance of a company history.

Mr. Brown's comments tie the details together adequately and he includes a number of descriptions of the Bay steamboats extracted from the writings of those who traveled that way. Some of these are early and all are interesting. Mr. Brown regrets the lack of similar accounts of the types of people who made up the passenger lists and we can assume that it was equally difficult to obtain descriptions of the cargoes and their sources and destinations. Without these it will be hard for the stranger to estimate the part played by the Old Bay Line in the development of the Bay country or its importance as a link in through transportation.

The steamboat historian and collector will find the book useful for the generous selection of good illustrations and a fine descriptive list of the vessels owned by the Line. The list contains fifty-eight vessels with a good paragraph of facts about almost everyone of them. Mr. Brown made a careful search of the newspapers and the commercial journals for notices of the Line's operation and a complete bibliography of his sources is included. The book can be well recommended as being stocked with information on its subject.

FRANK A. TAYLOR

F. W. Howay, ed., *The Journal of Captain James Colnett aboard the* Argonaut *from April 26, 1789 to Nov. 3, 1791* (Toronto: The Champlain Society, 1940). 6½" x 9½", cloth. xxxi + 328 + xii pages, 26 illustrations. No. 26 of *Publications of The Champlain Society*, for distribution to members of the Society and to subscribing libraries.

In the spring of 1789 James Colnett, an officer of the Royal Navy on leave, who had some twenty years before been one of Cook's midshipmen, left Macao for the Northwest Coast of America in command of the snow *Argonaut* and three other vessels, with the intention not only of trading on the Coast but of forming a permanent establishment at Nootka Sound, to be called Fort Pitt. On arriving at Nootka in July, Colnett and his vessels were seized by a Spanish naval officer, Don Estéban José Martínez, who had been sent from Mexico to found a similar establishment there on behalf of Spain. Both men acted according to their respective instructions, but their instructions conflicted, for at this time Spain claimed the sovereignty of the western coast of America as far as Prince William Sound, as well as the exclusive commerce, navigation and fishery of the Pacific Ocean, while the British government maintained that its subjects had the right to trade and settle at any point on the shores of that ocean, except at places already in possession of a civilized nation. Diplomatic correspondence between London and Madrid ran high for months, during which time Colnett was in Mexico City, submitting acrimonious claims to the Viceroy of Mexico, who replied with more courtesy than he was addressed. In the end the British won, for in March 1790 the Spanish government instructed the Viceroy of Mexico to release the captured vessels, though it was July (approximately a year after the seizure) before Colnett was again on his way, and 28 October before the Nootka Sound Convention, whereby Spain abandoned her extravagant claims to the Pacific Ocean and the Northwest Coast, was signed. Once released Colnett spent five months of highly successful trading for sea-otter skins on the Coast before returning to China. Arriving at Macao in May 1791 he found Chinese ports closed to all ships having furs on board, so made an unsuccessful attempt to re-open trade with Japan. In the end he disposed of part of his cargo in northern China, and, having sold his badly battered *Argonaut* at Macao, took himself to England with the remainder of his furs.

Colnett's journal of this voyage, long believed to have been lost, was unearthed in the Public Record Office in 1935 by Mr. Donald Angus of Honolulu, and has now been edited for The Champlain Society by Judge Howay. It is a capital document, for it not only gives a day by day account of the details of an affair which had important diplomatic consequences, but also a full picture of the difficulties of a maritime trader in obtaining and disposing of a cargo of sea-otter skins in the years 1789-1791. The editing is of the quality that one expects from Judge Howay, and the physical presentation of the book is good. Numerous maps and sketches from the original journal are reproduced, and various related documents – including a translation of Martínez's unpublished diary covering the seizure of the *Argonaut* – are included in appendices.

Colnett himself does not improve upon acquaintance. Granting that he had undergone a most unpleasant experience, which he believed to be unjustified, he emerges from his own pages as a suspicious, quarrelsome fellow, given to exaggera-

tion. Martínez's account of the seizure, which seems straightforward and honest enough, describes Colnett's saying that 'whether I permitted him or no, he was going to set sail immediately, and that (if I did not like it), I might fire at him, for he was not afraid of us.' This speech, accompanied by 'God damned Spaniard' in a loud voice and Colnett's frequent placing of his hand on his sword, did little to establish civil relations. During his captivity Colnett complained loudly about everything, even though a number of people went out of their way to be decent to him. The Viceroy of Mexico kept his temper better than one might have expected from the tone of Colnett's addresses to him, though the following letter, in answer to a bill presented without an accompanying letter, suggests that even his patience could wear thin.

Una vez que la carta de vuestra merced del 14 del corriente se reduce unicamente a la relacion de las sumas que ha percivido y de los recivos qua ha firmado, debo contestarle solamente que quedo enterado de su contenido.

Dios guarde a vuestra merced muchos años.
El Conde Revilla Gigedo

Mexico, 17 de abril de 1790

However tiresome Colnett may have been personally, his journal will repay study. Its publication gives still another cause for gratitude to Judge Howay in making available essential documents for the study of the Northwest Coast.

WALTER MUIR WHITEHILL

Guide to the Material in The National Archives (Washington: U. S. Government Printing Office, 1940). 6″ x 9″, wrappers and cloth. xviii + 303 pages, indexed. 40¢ in wrappers. 70¢ in cloth binding.

A guide to the 320,000 linear feet of records that have been received by The National Archives from its foundation to 31 December 1939 must necessarily employ broad strokes of the brush to remain within reasonable limits of size. Nevertheless the present publication makes it clear that in source material for maritime history, as in many other subjects, The National Archives is probably richer than any other single institution in the United States. Customs records have long been recognized as indispensable sources of information about merchant shipping and shipbuilding, but even a rapid perusal of this book shows that the records of other government departments are to be reckoned with.

The guide, like the records themselves on the shelves of the Archives, is arranged by the agencies of the Government in which the documents originated. Records of diplomatic and consular posts (1793-1937) of the Foreign Service, Department of State, contain (from the seaport consulates) records of the arrival and departure of American vessels, descriptions of their cargoes, lists of seamen shipped, discharged and deceased, and marine protests. Treasury records include papers of the former Lighthouse Board, a considerable quantity of custom-house maritime records (chiefly between 1792 and 1801) sent to Washington in 1885 in connection with the French spoilation claims, as well as miscellaneous records of the New York Custom-house, 1830-1875. Navy papers include the ship plans of the Bureau of Construction and Repair, 1795-1921, ship logbooks, 1801-1862, and papers of the Naval Observatory,

among which are letters received by Lieutenant M. F. Maury from 1842 to 1861. Records of the Marine Division of the Weather Bureau (classed under the Department of Agriculture) contain Lieutenant Maury's great collection of 'abstract logs,' while the records of the Department of Commerce include the original certificates of registry, enrollment and license of American vessels from 1815 to 1919, and correspondence of the former Steamboat-Inspection Service.

Even from the summary descriptions of the guide, it is clear that there are maritime documents for all tastes and periods. The Editors of THE AMERICAN NEPTUNE hope to publish in future issues a series of articles describing a number of these collections.

The Foreword by the Archivist states that the primary objectives of The National Archives are 'the concentration and preservation of such noncurrent records of the Government of the United States as appear to have administrative, research, or informational value and the administration of such records so as to facilitate their use by officials, scholars, and others to whom they might be of service.' Naturally Government officials have the first claim upon the services of the Archives staff, but as a private individual who has made frequent and troublesome requests for information, I cannot speak too highly of the efficiency, helpfulness and courtesy of all members of the staff with whom I have come in contact, nor conceal my admiration for the skill with which they handle colossal tasks.

WALTER MUIR WHITEHILL

John Carter Brown Library, Providence, Rhode Island. Report to the Corporation of Brown University, July 1, 1940 (Providence: John Carter Brown Library, 1940). 5" x 7½", wrappers. 67 pages.

Mr. Lawrence C. Wroth's annual report describes, in addition to the early American books that one expects, a collection of one hundred books and manuscripts relating to shipbuilding, seamanship and maritime law from the seventeenth to the nineteenth centuries, which have been given by Zechariah Chafee in the name of the Brown University Class of 1880. Among the books are the rare plates made to accompany Marestier's *Mémoire sur les Bateaux à Vapeur des États-Unis d'Amérique* (Paris, 1824). Among the manuscripts are three collections of original sail plans: *Alden and Hafford's Draft Book, a manuscript book of Plans for sails made in New Bedford, 1829-1858*, and loose sets of sail plans by Thomas Hart & Co. and Briggs & Beckman of New Bedford, 1860-1890. The collection was originally formed by Thomas B. Card of Providence.

Plans are described for a three-year project of investigation in the libraries of Mexico and South America for the purpose of copying on microfilm 'every available printed title of source value in colonial historical study not now existing in an original copy in any of the Brown University libraries.' A positive film of each book will be sent to the Library of Congress, and positives are to be sold at cost to individuals and institutions. Dr. Irving A. Leonard, Professor of Hispanic Civilization in Brown University, will be in charge of the project.

Massachusetts Historical Society Proceedings, October 1932 — May 1936, Volume LXV (Boston: Massachusetts Historical Society, 1940). 6″ x 9½″, cloth. xv + 619 pages, 10 illustrations. $3.00.

Papers of specifically maritime interest read before the Massachusetts Historical Society include 'The Journal of a Voyage in the Clipper Ship *Dreadnaught*' by the late George Francis Dow (pp. 3-21), based on a private journal kept by Charles Swinscoe, stevedore, between March and May 1854; 'The *Boston* and the *Berceau*' by Dr. Gardner W. Allen (pp. 163-168), describing bills for the fitting out of the prize ship *Berceau* in 1801 among the papers of Samuel Brown, United States Navy Agent; and 'Frederic Tudor, Ice King' by Henry G. Pearson (pp. 169-215). 'Some Old-Fashioned Winters in Boston' by Fitz-Henry Smith, Jr. (pp. 269-305) includes accounts of ice-breaking in Boston harbor, and is illustrated with reproductions of the 1844 Vaudricourt and the 1876 Mayer lithographs of the Cunarder *Brittania* leaving Boston 3 February 1844, and of a Frédéric Roux water-color of the bark *Tedesco*, which was wrecked at Swampscott in the winter of 1856-1857. Judge Howay's 'Some Notes on Robert Haswell (pp. 592-600) is of particular interest.

Sailing Vessels in the San Diego Trade (San Diego, California: Maritime Research Society of San Diego, 1940). 5¼″ x 7¾″. 8 pages. *Bulletin No. 1 of the Maritime Research Society of San Diego* (address: c/o the Harbor Master, San Diego). 15¢

The Maritime Research Society of San Diego, founded two years ago for the purpose of collecting and preserving the maritime history of the Pacific Southwest, meets every second month in the cabin of the bark *Star of India*. Its first publication lists the names, tonnage and years of arrival of some 492 vessels, both American and foreign, at San Diego. The opening of railway connections to the north and a real estate boom made San Diego a port of some consequence in the last years of the nineteenth century. Lumber, building materials, and railway supplies were brought in, though coal and cement were the principal cargoes of incoming vessels. The present list has been compiled from the records of the Port Pilots, 1888-1902, newspaper files and customs records. The Society has made an excellent start with this publication, and it is to be hoped that further *Bulletins* will soon follow.

Florence G. Thurston and Harmon S. Cross, *Three Centuries of Freeport, Maine* (Freeport, 1940). 6″ x 9″, cloth. xii + 254 pages. $5.00. (Sold by A. J. Huston, 92 Exchange Street, Portland, Maine.)

A well written and well printed history of a Maine coast town, containing chapters on the Freeport-built 1812 privateer topsail schooner *Dash* (pp. 55-64), Captain Josiah A. Mitchell of the clipper ship *Hornet* (pp. 93-123), and local shipbuilding (pp. 124-138), with lists of vessels built by Soule Brothers, Enoch Talbot, Briggs and Cushing, Gershom and Charles Bliss. In the account of the burning at sea in 1866 of the *Hornet* and the 4000 mile voyage in ship's boats of the survivors to the Sandwich Islands, the private journals of Captain Mitchell and of two passengers, Samuel and Henry Ferguson, are quoted at length.

Steamboat Bill (Flushing, N. Y.: Jay Allen, 132-70 Sanford Avenue, 1940), Volume I, numbers 1-3. 8½" x 11", mimeographed. 36 pages, 4 photographs. Annual subscription: $1.00 for contributors, $1.15 for non-contributors.

Steamboat Bill is 'published as a hobby in the interest of steamboat enthusiasts, and deals with past and present passenger and freight power vessels, up to about 7,000 tons, of the lake, river, harbor, bay, sound and coastal waters of North America, principally east of the Mississippi River Valley.' By the use of an ingenious series of symbols and abbreviations, Mr. Jay Allen has compressed an extraordinary amount of information into the three numbers of *Steamboat Bill* which have thus far appeared, and has furnished an excellent means for communication between collectors and steamboat enthusiasts. It is an unsubsidized personal venture, which should prove of high value to a specialized group. As an increased subscription list will enable Mr. Allen to include more material in future numbers, the Editors of THE AMERICAN NEPTUNE hope that any of their readers who are interested in the minutiae of American steamboat history will support this venture.

Le Marquis de Melauze (Ristigouche, P. Q., Canada: Musée de Ristigouche, 1940). 6¼" x 10". Text in French and English. 4 pages. No. 3 of *Bulletin du Musée de Ristigouche*. 5¢.

An account of the salvage of portions of the hull of the French ship *Marquis de Malauze*, destroyed at Ristigouche in 1760, received through the kindness of Rev. J.-A. Allard, curé of the paroisse Ste-Marie-du-Mont-Carmel, Bathurst-Est, N. B.

A. D. DIVINE, *In the Wake of the Raiders and The Merchant Navy Fights* (New York: E. P. Dutton & Co., Inc., 1940). Octavo, cloth. 153, 121 pages, 19 illustrations. $2.50.

A popular account of naval actions of World War II, written by an Englishman.

EDWIN VALENTINE MITCHELL, *Anchor to Windward* (New York: Coward-McCann, Inc., 1940). Octavo, cloth. 270 pages, indexed. $2.75.

An informal and readable book about the Maine Seacoast Mission and the people and communities it has served for thirty-five years. The map end-papers are a useful complement to the text. Pen-and-ink sketches by Ruth Rhoads Lepper.

KARL BRANDT, *Whale Oil. An Economic Analysis* (Stanford: Food Research Institute, 1940). Octavo, cloth. 264 pages, indexed, diagrams. $3.00.

Students of the history and methods of whaling will find this volume more interesting than the title may indicate.

ALAN GRAY, *Sailmaking Simplified. A Practical Manual for the Amateur* (New York: The Rudder Publishing Co., 1940). 12mo, cloth. 134 pages, illustrated with drawings and photographs. $2.25.

The most comprehensive and up-to-date book on the subject. Some die-hards may be mildly shocked to find that 'gaff sails are not treated as they are a thing of the past.'

News

Marine Historical Association, Inc.

Mystic, Connecticut. The formal opening of the Association's new building took place at the annual meeting on 27 July 1940, when a brief dedicatory service in memory of Dr. Charles K. Stillman, the founder of the museum, was held. The additional space provided by the new building amounts to 7,000 square feet, two thirds of which is available for exhibition purposes and the remainder for offices, repair shop and storage. The opening was marked by a large attendance, which proved to be the beginning of a very substantial increase in the number of daily visitors. By the close of the summer season the attendance showed an increase of 600 per cent over previous years.

Marine Exhibit

San Francisco, California. An exhibition of ship models, pictures, prints and documents was held in the Merchants Exchange Building, during October and November 1940, under the auspices of the following committee: Edward S. Clark, chairman; Mrs. Alma Spreckels Awl; William A. Baxter, secretary; Jerome Landfield; Roger D. Lapham; John N. Rosekrans and Mrs. Edgar Walter. It is hoped that the interest aroused by this exhibit may lead to the formation of a permanent Pacific Coast Marine Museum of San Francisco.

Peabody Museum Marine Associates

Salem, Massachusetts. The following papers have been read at the monthly meetings of the Peabody Museum Marine Associates since the formation of the group in February 1939:

27 March 1939, Howard I. Chapelle: Half-models and lines of ships: what they were and how they were used.

24 April 1939, D. Foster Taylor: The Piscataqua River Gundalow.

22 May 1939, William E. Northey and Walter Muir Whitehill: The model collection of the Peabody Museum.

26 June 1939, John W. McElroy: Customs records as source material for maritime history.

24 July 1939, L. Francis Herreshoff: The influence of use and laws on the modelling of vessels.

28 August 1939, Edwin W. Small: Early wharf building in Salem.

25 September 1939, Howard I. Chapelle: The proposed restoration of Perry's flagship *Niagara*.

23 October 1939, Lincoln Colcord: The last forty years of American sail, 1865-1905.

27 November 1939, Richard Orr: The construction of ship models.

18 December 1939, Captain Harold G. Foss: American sailing vessels.

22 January 1940, Thomas A. Stevens: A survey of Connecticut in maritime history.

26 February 1940, Charles D. Childs, Ship pictures — good and bad.

25 March 1940, Carl C. Cutler: The Marine Historical Association at Mystic, Connecticut.

22 April 1940, J. Stewart Kellogg: The Penobscot Expedition of 1779.

27 May 1940, William G. Saltonstall: Gold, tea, slaves and opium — the Portsmouth clippers.

24 June 1940, John W. McElroy: moving pictures of the Harvard Columbus Expedition.

22 July 1940, William B. Sturtevant: Personal reminiscences of the ship *Great Admiral*.

26 August 1940, William King Covell: Development of the side-wheel steamboat from 1860 to 1910.

23 September 1940, Giles M. S. Tod: moving pictures of the bark *Herzogin Cecilie* and New England coasting and fishing vessels.

28 October 1940, Edward B. Thomas: Medford shipbuilding and its relation to Massachusetts maritime commerce, 1803-1873.

25 November 1940, William U. Swan: Founders of American yachting.

23 December 1940, John Leavitt: Reminiscences of coasting schooners.

Ship Model Society

New York City. The Ship Model Society of the City of New York has decided to include subscription to THE AMERICAN NEPTUNE as part of the benefits of membership. Members of that Society, who have paid annual dues of ten dollars, will receive THE AMERICAN NEPTUNE without further charge. The officers of the Society are Gordon Grant, President; Griffith Baily Coale, Secretary; Rodney W. Williams, Treasurer; Dr. William Travis Gibb, Jr., Charles B. King, H. Morton Merriman, Samuel Croft Register, and Dr. Karl Vogel. The Secretary's address is 125 West 11th Street, New York City.

Steamship Historical Society of America

Salem, Massachusetts. A meeting of the Society was held at Salem on 25-26 August 1940. Permanent headquarters were fixed at the Peabody Museum, and Messrs. Jay Allen and William King Covell were appointed a committee to draw up a constitution. The Society proposes to hold three meetings a year, in April, August and December. Anyone seriously interested in the objects of the Society may become a member upon approval of his application by the Executive Committee and the payment of annual dues of one dollar.

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